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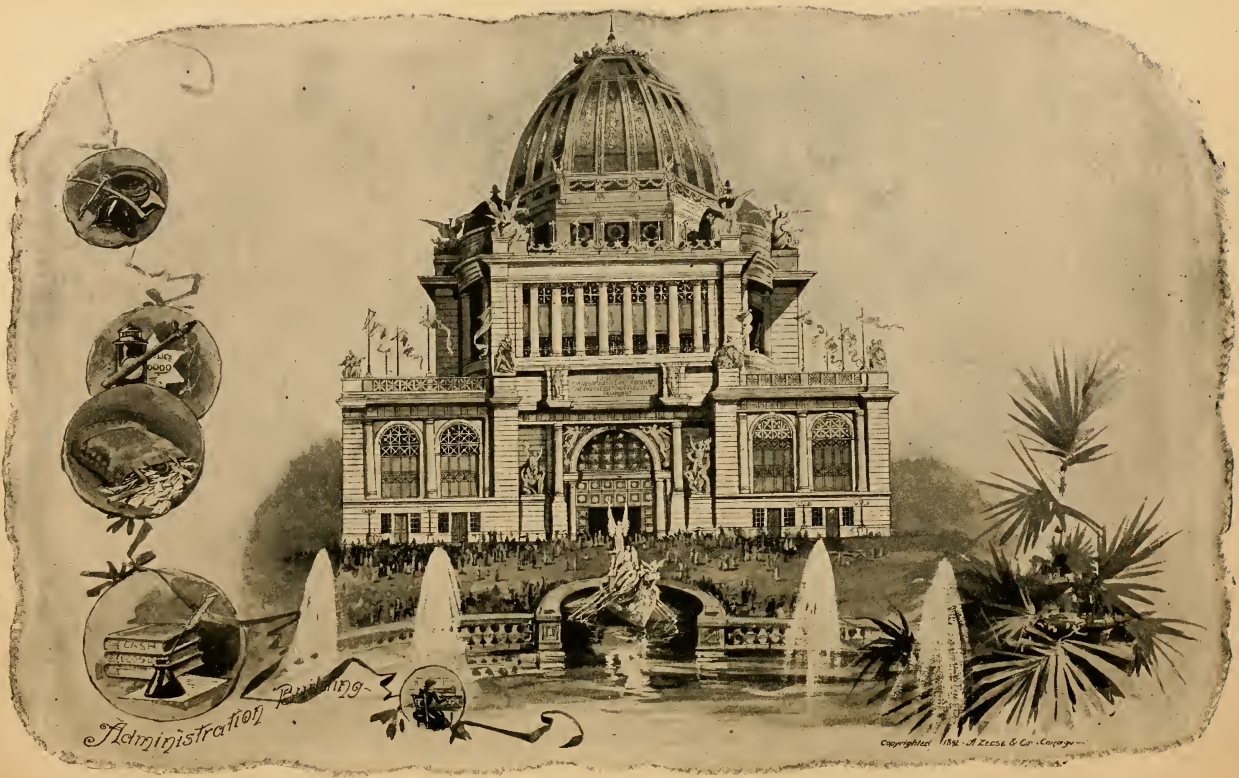
Administration Building
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THE WORLD'S COLUMBIAN EXPOSITION, CHICAGO, 1893.

By TRUMBULL WHITE, *World's Fair Correspondent.* AND WM. IGLEHEART, *World's Fair Editor of "Chicago Record."*

A Complete History of the Enterprise; a Full Description of the Buildings and Exhibits in all Departments; and a Short Account of Previous Expositions, with an Introduction

By COL. GEORGE R. DAVIS,

Director-General of the Exposition.

And an Introduction to the Woman's Department

By MRS. POTTER PALMER,

President of Board of Lady Managers.

WITH SPECIAL CHAPTERS BY

HON. THOMAS B. BRYAN, *Commissioner-at-Large.*
PROF. F. W. PUTNAM, *Chief of Department of Ethnology.*
PROF. JOHN P. BARRETT, *Chief of Electrical Department.*
CAPT. J. W. COLLINS, *Chief of Fisheries Department.*
FREDK. J. V. SKIFF, *Chief of Mining Department.*

FULLY ILLUSTRATED

WITH HALF-TONE AND WOOD ENGRAVINGS AND PEN DRAWINGS BY THE BEST ARTISTS

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INTRODUCTION.

By Col. George R. Davis,

Director-General of the Exposition.

When the gates of the World's Columbian Exposition have been finally closed it will be time enough to impress its lessons upon the world. To attempt to do so now would be premature, and perhaps misleading. But since its glories have been unveiled to the public gaze, and its success has been assured, it is well enough to review the successive steps which have led to that success, and to present in a comprehensive way some of the features which will make it ever memorable in the annals of International Expositions. No one can appreciate fully the magnitude and the significance of the microcosm at Chicago in 1893 without some such knowledge as is herein presented, of how it came about that on the shores of Lake Michigan such wonders have been wrought.

Chicago possessed many well-supported claims, aside from the distance from the sea board, to furnish the ideal site for an ideal Exposition. In itself the phenomenal city—so gigantic, so young, so rich, strong and powerful—is the very essence of American progress. It is so essentially the most distinctively American of the great towns of the United States, that many other cities are foreign compared with it. To all discerning minds it consequently appeared eminently proper that the celebration of our four centuries of unexampled prosperity, of which this marvelous city is itself the apotheosis, should be held in Chicago.

Upon Chicago's own part there was no sort of doubt as to her peculiar fitness for the undertaking, and she entered into the competition to secure it with characteristic energy and enthusiasm, both as unlimited as her strength and courage. It is now a matter of

history that she won, and it is scarcely worth while to describe in detail the heroic measures resorted to, in securing the prize, over her older and subtler sisters. The pledged ten millions and more were raised, and a site acceptable to the National Commission was found. This was far more difficult than may appear at a glance, owing to the characteristically stupendous scale upon which Chicago immediately began the formulation of her Exposition plans. It was not easy to find commensurate space with improved surroundings. Jackson Park, the proposed location, was only partially improved, and owing to this fact the proposition of a divided site was made, and strange as it now seems, had many supporters. Gradually, however, with strenuous efforts, the makers of the World's Fair struggled towards the light, and the site problem was finally solved by the acceptance of Jackson Park and Midway Plaisance upon the proffer of the same by the South Park Commissioners.

In this way was obtained a location of unexampled beauty and extent, stretching nearly three miles throughout its extreme length. Along the east front lies Lake Michigan, while in every other direction the Exposition grounds are bounded by the fringing tree tops of one of the vastest park systems in the world. Yet necessarily included in the magnificent site was a considerable amount of unimproved land, comprising a series of swamp and sand hill, and from this natural defect grew the most beautifying single feature of the entire landscape scheme. Grand basins and broad lagoons ultimately replaced swamp and unsightly sand hills, and resulted in the now famous Venetian effect of the World's Columbian Exposition, which fills the beholder with dazzled delight. But this came only from months of Titanic toil, and the expenditure of vast sums, and following with all possible speed hard upon the preparation of the background came the process of actual construction of the main buildings. It is not easy to overestimate the stupendous character of this portion of the greatest enterprise of modern times. The utmost power of genius and many millions of money were unitedly brought to bear upon the execution of the infinite details of the general plan. The greatest architects in America designed the structures, the most skilled artisans executed their designs, famous artists sup-

plied the ornamentation, while an army of humbler workers ceaselessly toiled still over the soil itself. Only those who were of this gigantic enterprise can grasp its immensity, the intricacy of the executive machinery of the Fair, the constant enlargement of plans, the addition of new structures, the multiplicity of detail, the enormous daily outlay required to keep in harmonious and perfect rhythm the many thousand picks and shovels and hammers, the conflicting ideas of the thousands of artists, sculptors, decorators, and finishers. Nor can any comprehensive impression be conveyed of the obstacles and discouragement from the elements, from wind and water, from fire and snow. Cyclones swept away the work of weeks in a lightning flash; Lake Michigan lashed by a furious tempest thundered threateningly against the very walls of the great Hall of Manufactures and Liberal Arts. Sailors, climbing to perilous heights which landsmen dared not attempt, laboriously cleared snow drifts from crushed roofs, only to find heavier flakes falling anew while they toiled. The second spring of Exposition preparations witnessed an unprecedentedly wet season, and its last winter was one of unexampled severity, yet not for a moment did the work flag. Enthusiasm bordering upon heroism, and zeal that was genuine inspiration, marked every division of the Exposition. Not an officer, not a workman, but subordinated self to the one end. There is a long list of names that should be emblazoned on bronze, and placed in Jackson Park, testifying to future generations of the worth and efficiency and self-sacrifice of men who made the Fair. Names of men who sacrificed time, personal ambitions, business interests and association with their families in order that the promise of the nation should be made good, and the gates of Jackson Park thrown open to the world at the appointed time.

While the enchanted White City—"The City of Aladdin's palaces"—was thus magically springing from the mud of a primeval prairie, the national and international character of the World's Columbian Exposition had become firmly established. State after State wheeled into line, making generous appropriation for buildings, and the collection of exhibits. I may be permitted in this connection to pay a well-deserved tribute to the Board of Lady Managers, which early

after its organization gave material aid to the Exposition, in the direction of State representation. Indeed in the creation of the Board Congress contributed in an extraordinary way to the general success of the World's Fair. As a body the Lady Managers have been economical and business-like; as an attraction, their building and their exhibits are among the most profitable to the Exposition Company. Their building, designed by a woman, is conspicuous for its architectural merits among all the beautiful creations of the Exposition. Its contents, wholly the work of women, attract and fix the attention of the visitor. For the first time in the history of international exhibitions, women have secured representation upon the Juries of Award. Foreign women have been placed in absolute control at Jackson Park, in positions where the sex would not be given an opportunity abroad. This is one of the educational features which American women at the Columbian Exposition confidently expect to impress on the sensibilities of Commissioners and other representatives of foreign countries.

As for the educational features of the World's Fair, it is difficult to estimate them; the effect of the whole is so overwhelming. Conspicuous in this line is the historical character of several of the State buildings, notably the old Mission of California, the John Hancock House of Massachusetts, Virginia's Home of Washington, Florida's Fort Marion, and so on throughout an almost endless list. The typical nature of some of the State structures of the great Northwest are also worthy of comment. In fact these States and Territories have evidently been keenly alive to the opportunity, and have come with their richest offerings of precious metals, corn, and wheat. Bringing their superabundance of raw material to the departments of Mines, of Agriculture, of Horticulture and Forestry, they find its required complement filling the manufacturing sections in Machinery Hall, and the division of Manufactures and Liberal Arts.

Mexico, and the Central and South American Republics, our foster children, also promptly came forward, accepting the cordial invitation to participate, and are now here with handsome and interesting special buildings, enriching the entire Exposition with

their wealth of cereals, precious metals, and priceless gems. Such a display of resources must do much to attract the attention of eager capital, and to establish advantageous reciprocal relations.

One after another in rapid succession the important countries of Europe, with scarcely an exception, promptly accepted the invitation to participation in the Exposition, extended by the President of the United States. Spain, who gave us Columbus, naturally comes first to mind, and occupies a distinguished position towards the World's Fair. The splendid exhibits draped by the Spanish colors in every department, the quaint caravels anchored outside the peristyle, the official visit of the Infanta, are all eloquent of Spain's prominence at the World's Fair. While honoring Columbus, Italy, the land of his birth, naturally comes next to Spain in our consideration, and her cordial participation in the Columbian celebration is all the more highly appreciated, because it began at a time when diplomatic relations between that country and America were severed.

Of Germany's share in the Exposition no praise can be extravagant. In every division of the classification her exhibits are superb; both comprehensive and magnificent. It is said that Germany has never before had an opportunity to show what she could do in the way of participation in an international exhibition. At World's Fairs previous to the Paris Exposition, Germany took part only to a very limited extent, and the political situation naturally prevented her participation in the latter. At the Columbian Exposition Germany has covered herself with glory. She has poured out her treasures with lavish hands, and has brought us the ripest fruits of her finest mechanism, subtlest thought, and highest art. The millions of sturdy Germans who have become valuable American citizens, pursuing lives of honest prosperity in every section of the United States, are filled with delight and justifiable pride at the honor paid by the Fatherland to the country of their adoption.

Austria also is here with a splendid display, many fine paintings, and the inimitable Old Vienna of Midway Plaisance. The Netherlands have sent us their greatest pictures, and are assisted in the general exhibit by many thriving Dutch colonies. Great Britain's

colonies also have united to do her honor, Canada, Australia and New South Wales being pre-eminent. It is the exhibits of its Colonies, indeed, which chiefly distinguish the display of Great Britain from that of our own country, which is one with England in blood, in temperament, in tongue, and in love of constitutional government. That we are still one and inseparate is evidenced in every corresponding branch of the classification; the same methods appearing in the English and American division of Mechanical Arts, and the same sentiments and sympathies glowing from its canvases in the palace of Fine Arts.

France too is here with her treasures of artistic skill, genius and art. A peculiarly close bond has existed between that country and ours since she lent us Lafayette in the hour of our desperate need.

Sweden, Norway and Denmark make magnificent displays. The latter was the only foreign country, strangely enough, which declined to appoint a committee of women to co-operate with the Board of Lady Managers, upon the preferment of a request from the Board to that effect. This decision was peculiarly and doubly singular, not only from the generally recognized progressiveness of the Queen, but because her Majesty's daughters resident in other countries had been from the outset enthusiastic advocates of the World's Fair, and the prominence of women in the making of it. This decision was, however, happily reconsidered, and Danish women are most creditable participants in the Exposition. The exhibits by these last named governments are of particular interest to the large Scandinavian population of the Northwestern States.

Belgium and Switzerland are brilliantly represented by characteristic displays. Indeed it were far easier to mention the nations who are absent—because they are so few—than those who participate. Russia came with the splendor that characterizes her. Russia has ever been the friend of the United States, and the presence of her mighty navy in American waters was a bulwark of strength to the loyal American heart, in the hour of our country's terrible struggle. America in turn did what she could when she sent Russia bread in the anguished days of the famine, and Russia bears a tender memory of that. Her crops have been bountiful of late, and the vast empire

has expended lavishly from its enormous stores, in sending a grand exhibit of its art and industries.

The Orient has not lagged behind Europe in coming to the World's Fair. In truth the blood-red banner of Turkey, with its snowy star and crescent, was the first foreign flag unfurled over the World's Fair grounds—with all the attendant imposing ceremonies of the Mohammedan religion. Japan's snowy ensign with its large scarlet disk was also among the earliest colors unfurled. That country has indeed distinguished itself by the enthusiasm, the munificence, the extent, and the pre-eminent courtesy of its participation along all lines of the Exposition. Without question the already recognized generosity, amiability and fine breeding of the Japanese shine with increasing lustre at the World's Fair.

It is much to be regretted that the strained diplomatic relations between our Government and that of China seem to have prevented official acceptance of our invitation to participation. But the World's Fair management exerted such counteracting influence as lay in its power, by securing special legislation favorable to Chinese exhibitors, and private firms profited by this effort, although the Government did not, and the World's Fair is consequently not without the unique attraction of a Chinese exhibit. Burmah and Siam have placed in evidence their unrivaled wares, and wondrous specimens, wrought in costly threads of gold and silver, of their characteristic fabrics.

It is scarcely necessary to name in turn each of the countries contributing to the vastest of World's Fairs. Suffice it to say that all the considerable nations of the earth are here. Nor need separate mention be made of its many great divisions. It is now generally known that there are thirteen of these, conducted by "Chiefs" of eminent ability, whose representatives have ransacked the world for the treasures of art, science and industry, for the benefit of the Exposition. Nor need the dimensions of the buildings provided for the best the world has produced be reiterated, although the untechnical mind does not readily grasp the real extent of a bare statistical statement. The generality of persons understand more fully when told that nearly twice as much steel and iron enter into

the construction of the giant hall of Manufactures and Liberal Arts than was required for the Brooklyn Bridge. Or that the pyramids of Cheops might be stowed under its great glass roof—which covers nine times as much ground as is occupied by the Capitol at Washington. Time was, two and a half years ago, while the making of the Exposition was yet to be achieved, when these stupendous facts needed to be told over and over again in necessary exploitation of the enterprise. The Department of Publicity and Promotion—to use Tony Lumpkin's words—"kept dinging it into" the whole reading world. Never had any previous Exposition been so extraordinarily and admirably advertised as was our own. No Department corresponding to that of Publicity and Promotion had ever existed before, and its remarkable work was accomplished along unexplored lines, without a precedent of any description to guide it. But it succeeded in the aim; it bore the tidings of the great work going on at Chicago from Dan to Beersheba, from New York to Paris, from Iceland to Egypt.

But the glowing promises made by the World's Fair writers are fulfilled now. There is nothing more to say save to invite visitors from far and near to behold the indescribable realization of these dazzling prophesies. To gaze upon such a scene of enchantment as was never before dreamed of outside oriental tales. A city of ivory palaces, embodying architectural dreams. Classic creations which stir the appreciative heart, and might have stood pre-eminent for their unapproachable beauty in the Athens of Pericles. The sculptured façade of the Grand Court, the stately colonnade of the Peristyle, through and above which gleam lake and sky as blue as the lakes and skies of Italy. On every side are columns and statues, the heroic figure of the Republic lifting its graceful proportions high above the silver waters below. We have covered the gigantic figure of the Queen of Freedom with gold, as the Athenians did that of Minerva. There are gilded domes also, and flashing minarets, the flags of all nations, and gay gonfalons galore. When the sun sinks out of sight and shadows creep over the lake, one by one the circling line of electric lights outlining the ivory façade gleam forth like endless strands of luminous jewels, and the dome

of the Administration Building glows like the most stupendous of exquisite cameos.

But all this is brilliantly in evidence, and gloriously beautiful though it is, represents after all only the material portion of our great Exposition. The Centennial Exhibition of 1876 in its own modest way showed what an International Exhibition can do for the country in which it is held. It put us forward a quarter of a century in the cultivation of taste, in the elevation of the standards of artistic workmanship, in the adaptation of the methods of older or more advanced civilizations to the needs of the newer continent, and in raising the masses to a plateau of higher intelligence. The benefits conferred by the Chicago Exhibition will exceed those of the Centennial in proportion to its greater artistic achievements and greater comprehensiveness in every department of human activity. These ideal buildings will influence the architecture of our own country—and indeed of the whole world that gazes upon it—for an indefinite period. The treasures of industry, science and art forming their contents, will be reflected in the pictures, fabrics and manufactures of many subsequent years. This will be the visible, artistic and commercial result of the World's Columbian Exposition. The subtler, intellectual and spiritual outcome is farther to seek and more difficult to foresee. It must, however, perforce include the stimulating influences born of the commingling of all races of men. Perception of the best each nation has to present must direct and invigorate to the elevation of individual and national life. The revelations of the World's Fair have already corrected many erroneous international opinions. The best thought, the most advanced methods of all countries in science, literature, reform, education, government, morals, philanthropy, jurisprudence —indeed, all those things which contribute to the progress, prosperity and peace of mankind—are exhibited in the Exposition itself, or discussed in its Auxiliary Congresses. The intense interest aroused by the latter has been evidenced by the attendance of many of the greatest leaders of thought in both Europe and America. The Rulers of other countries have sent special envoys to our Exposition; with injunctions to observe our institutions, customs and privi-

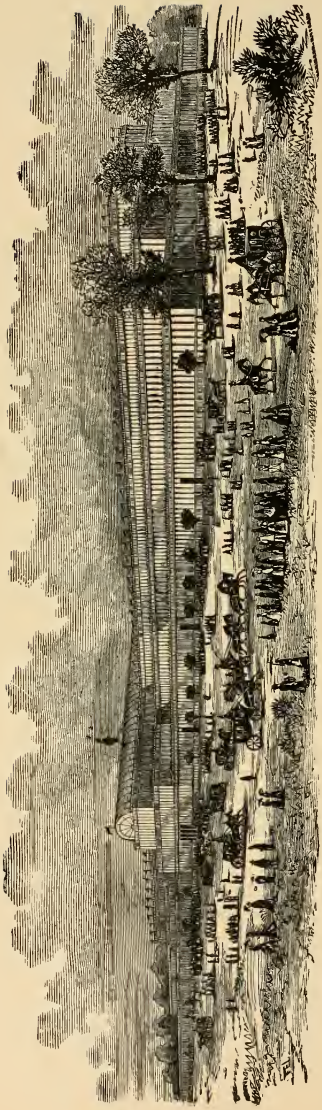
leges, with a view to the adoption of the most advantageous. We in turn are eagerly scanning the foreigners, alert to learn the best they have to teach. From such conditions lasting results of incalculable benefit must certainly come.

Previous Exhibitions.

REVIEWING the history of international exhibitions, it seems almost incredible that the first effort in that direction was instituted less than half a century ago. In the forty odd years that have intervened the art of exhibiting has grown into a science as exact in its general rules and as far-reaching in its effect on civilization as its antithesis, the science of war.

England claims and deserves the honor for the first great gathering of the nations of the earth in this rivalry of the arts and industries; and to Prince Albert is due the initiative and successful culmination of the project—the Crystal Palace exhibition held in London in 1851. While the great honor of that enterprise falls rightfully to the Britons, its suggestion and the starting-point of all competitive exhibitions was in France, where the custom of awards for excellence in industrial and artistic displays had been in vogue for years.

The general management of the Crystal Palace has had a peculiar and significant bearing on all subsequent exhibitions of correlative scope. In the very outset building plans were selected in competition, setting a precedent in selection that has prevailed generally ever since. The time allowed for the presentation of plans was very short, only a month, and yet there were 233 competitors, one-sixth of whom were foreigners, about one-half from London and its immediate environs, and the rest from provincial towns of England. The plans adopted and the character of the structure erected according to their specifications are too widely known to need elaborate explanation or comment. The contract called for a building 1,851 feet long, the numerals corresponding with the year, and 450 feet broad. The enormous size of the un-



CRYSTAL PALACE, LONDON, 1851.

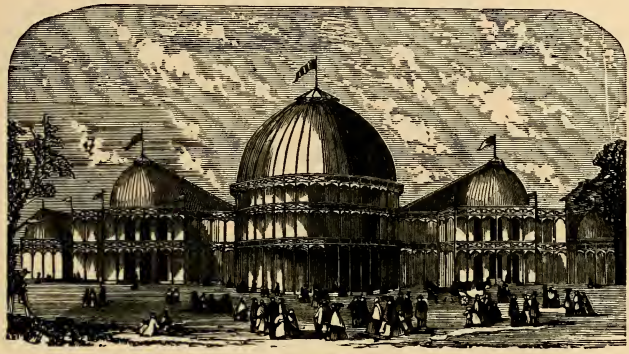
dertaking may be understood when it is known that something like 20 acres of glass, 205 miles of sash-bar, 34 miles of gutter-pipe and a correspondingly large amount of flooring and walling material were required. The cost was estimated at about a million dollars.

The number of employees connected with the Crystal Palace is of peculiar interest to those who have wondered how many employees would be required to maintain the Columbian Exposition to its close. As near as can be ascertained, over 10,000 persons were engaged in the maintenance or furtherance of the Crystal Palace.

On the first of May, 1851, the Queen herself opened the doors of the exhibition, while the Prince made the address of the day, describing the purposes of the display and the causes that led to the undertaking. The historical significance of the occasion requires the greatest weight and dignity from the personages of fame present. The Duke of Wellington, Lord Palmerston, the Marquis of Anglesea, and the principal lords and ladies of the empire were there.

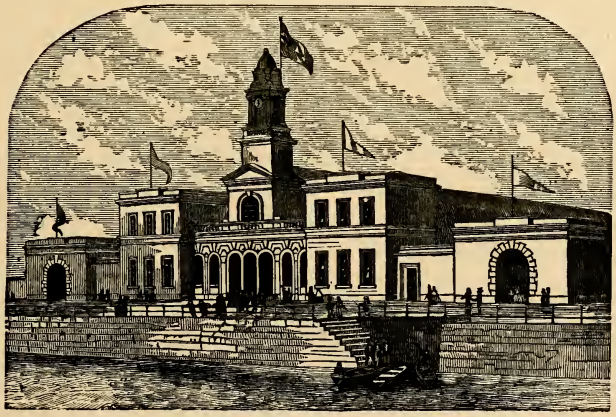
From this auspicious dedica-

tion to the last day of the Exhibition there was not a question of its tremendous value to the world of commerce and to the pursuits



DUBLIN EXHIBITION, 1853.

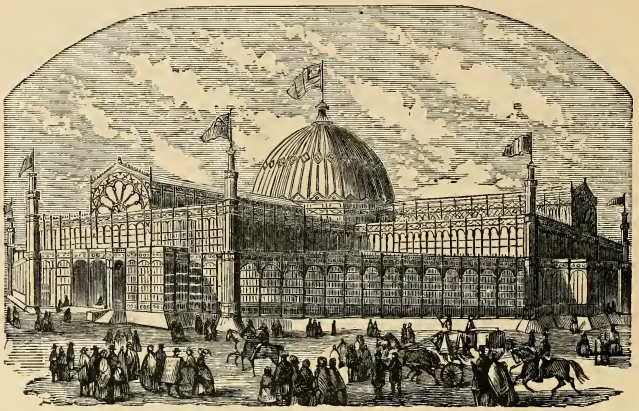
of peace. What was most remarkable, when one remembers the outcome of subsequent exhibitions, was the fact that the finances



CORK EXHIBITION, 1853.

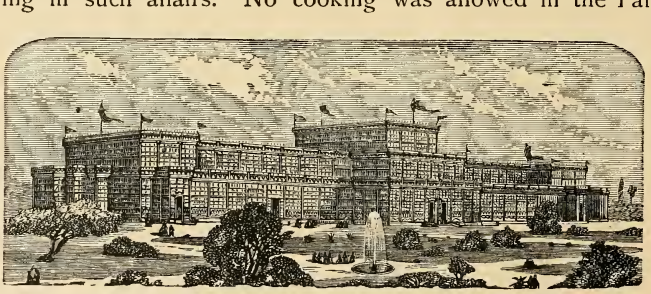
were so well managed that a surplus of nearly a million dollars remained in the treasury after all the expenses were paid. No such re-

turns have been obtained since in proportion to the sources of revenue on concessions. In the first place, no liquors were allowed to



NEW YORK EXHIBITION, 1853.

be sold on the grounds, depriving the Exposition of what has generally been a source of the heaviest income in the continental exhibitions. The refreshment concession was sold for $27,500, a sum that seems ridiculously small in these modern days of financiering in such affairs. No cooking was allowed in the Palace,



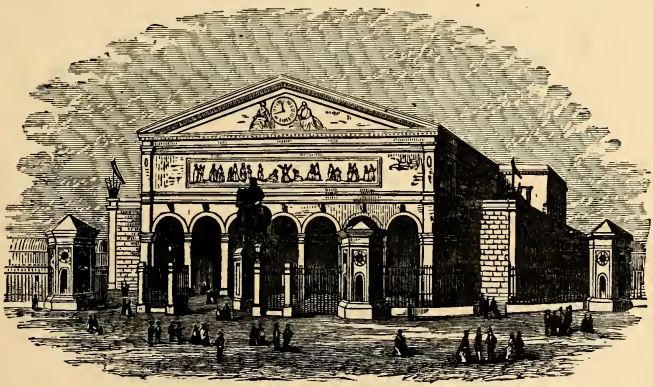
MUNICH EXHIBITION, 1854.

and yet the total receipts from refreshments to the holders of the concession were estimated at $375,000.

When it came to fixing the rates for admission, there was some

MANCHESTER EXHIBITION, 1857.

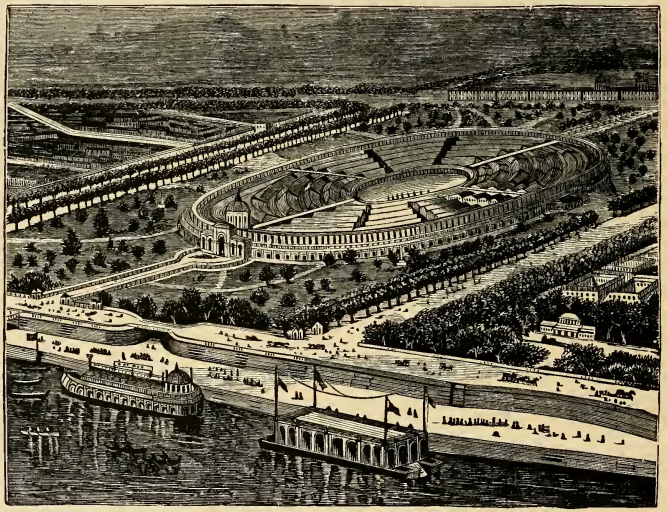
little discussion. It was decided to make the figures for four days in the week at a price that would allow the people of moderate



FLORENCE EXHIBITION, 1861.

means to take advantage of the educational advantages the Exhibi-

tion offered, while the other two days were designed more particularly for the people who preferred the comparative exclusion that would follow from a higher-priced admission. Accordingly, the admission on every day but Friday and Saturday was fixed at one shilling, or 25 cents; on Friday, two shillings sixpence (75 cents), and on Saturday five shillings, or $1.25. Altogether, $1,780,000



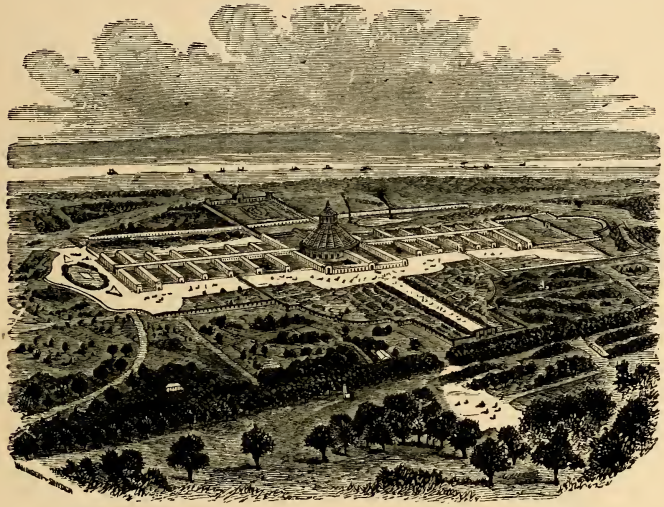
PARIS EXPOSITION, 1867.

was taken in at the entrances, of which about $2,500 was counterfeit silver. It was estimated at the time that the city of London increased its total income by about $20,000,000 during the six months of the exhibition.

It is a fact worthy of notice that although the United States had very few exhibitors in attendance, they secured a larger number of awards in proportion to the representation than any of the foreign nations that participated. The reapers, pianos, vehicles and textile fabrics sent from the United States attracted special attention, while Powers' sculpture, "The Greek Slave," was a great sur-

prise to the continental and insular critics, who thought at that time that America had nothing of art worth considering.

In awards there were three grades—a council medal, equivalent to a diploma of honor; the gold prize medal, and certificates of



VIENNA EXPOSITION, 1873.

honorable mention. Altogether, 5,248 awards were conferred; of which American exhibitors secured 5 council medals, 102 prize medals, and 53 honorable mentions.

THE NEW YORK EXHIBITION.

Although Dublin held an exhibition in 1853 which made some claim to international scope, it was more particularly local in its essential features, was initiated and carried on by private capital, and was remarkable for nothing except its magnificent collection of paintings, which was the finest ever brought together up to that time.

The New York World's Fair was the immediate successor of the Crystal Palace, and, indeed, had its origin in the visit of a number

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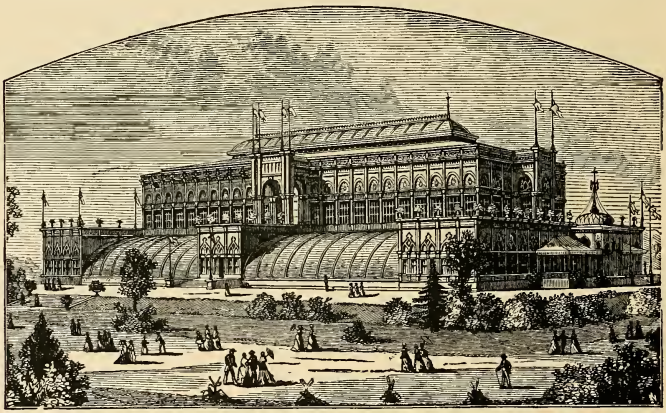
of Americans who had seen the wonderful success of Prince Albert's exhibition, and had thought that even greater things in plan might be repeated on the western continent. In the very outset, however, the promoters of the undertaking found themselves at a great disadvantage in the absence of government support. They found, too, a surprising hostility in the State and City of New York from the very merchants and traders whom it was expected to benefit most. Some enemies of the scheme even went so far as to base their opposition on the argument that the exhibition must necessarily injure their commerce both at home and abroad by affording competitors a vantage-point in their own territory. In the face of this opposition, ground was leased at the corner of 42d street and 6th avenue in January, 1852, and a State charter was



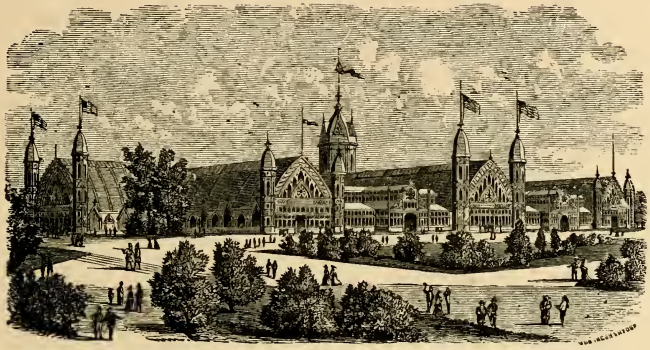
CENTENNIAL EXHIBITION, 1876—HORTICULTURAL BUILDING.

granted in March of the same year, the capital stock being $200,000. Work was begun on the plans selected in August, but the Fair was not formally opened until July 14, 1853. President Pierce, some of his cabinet, Horatio Seymour, then Governor of New York, the governors of several other States and a number of distinguished diplomats were present at the opening ceremonies.

The classification of exhibits was the same as at the London

exhibition. There were only four groups—raw materials, manufactures, machinery, and fine arts. Forty-one hundred exhibitors participated, of whom less than one-half were Americans. The total expenses were $640,000, receipts about $340,000, leaving a deficit of $300,000 to be borne by the stockholders.

Paris, 1855.—Until 1855, international displays had been chiefly directed toward the stimulation of commercial interests, and the



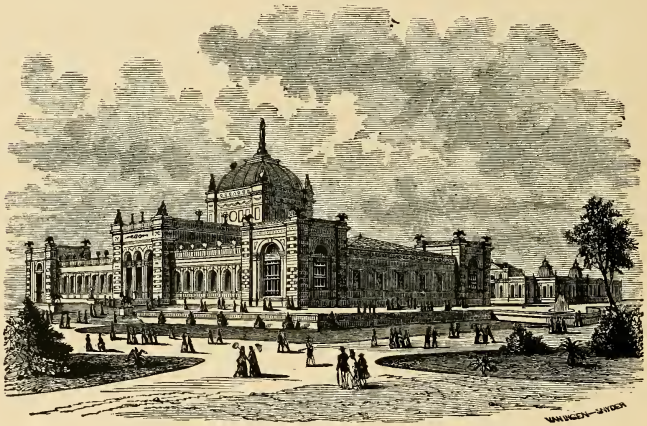
CENTENNIAL EXHIBITION, 1876—AGRICULTURAL BUILDING.

development of industrial skill by awards in competition. It remained for Louis Napoleon, Emperor of France, to put forward the purely artistic phases of exhibition as the most conspicuous and best deserving of reward. The French people, artists by inheritance and national education, seized the opportunity to emphasize their pre-eminence in the arts and co-operated with the government in the installation of an exhibition that was the marvel of that day, and which served to determine the value of decorative and artistic excellence in the success of such undertakings.

Three main buildings were devoted to the Paris Exhibition of 1855. The Palace of Industry, a permanent structure which is still a feature of the Champs Elysees, was the principal exhibit hall. It is rectangular in shape and of solid construction, and contained the industrial groups. An annex 4,000 feet long was given over to machinery. Still another building, the Palace of Fine Arts, was

separated from the others by a considerable distance. Between the Palace of Industry and the annex was a rotunda in which were placed the crown jewels of the empire and a valuable collection of tapestries and other works of art belonging to the government.

In this as in most of the great expositions, the United States had very scant representation. Out of 24,000 exhibitors, only 144 were Americans. Thirteen of the number were in the department of fine arts. Exhibits were subdivided into eight groups, which were in turn divided into 31 classes. Jurors to the number of 398 made



CENTENNIAL EXHIBITION, 1876—ART GALLERY.

the awards, and 190 of the jurors were from foreign countries. One hundred and twelve grand medals of honor, 252 medals of honor, 2,300 first-class medals and 4,000 honorable mentions constituted the awards. Of these Cyrus H. McCormick was the only American to receive a grand medal of honor. Messrs. Healy, May and Rossiter were the American artists most conspicuously noticed.

The total number of visitors during the exposition period was 5,162,330. The price of admission varied from eight cents on Sunday to $1.00 on Friday, which was a reserve day, but the

general admission on week-days was one franc, about 20 cents. The expenses exceeded the income by over $4,000,000, but that included the cost of the permanent building, which represented a large part of the total expense. Even allowing for this item, the exposition itself was a financial loss, but it was estimated at the time that Paris gained about $10,000,000 expended by strangers in the city.

Several minor displays under the name of international expositions, but not so in reality, intervened between this time and the second great Universal Exhibition held in London in 1862. This was intended to eclipse the one held in Paris, and it very much surpassed all its predecessors. The buildings were of brick, iron and glass, and adjoined the gardens of the Horticultural Society at South Kensington. The edifices prepared for the exposition were very large, and of considerable architectural beauty. The main buildings and annexes together covered more than 23 acres. The opening ceremonies of this exposition were held May 1, 1862, and were considered to form the most elaborate pageant that had been seen for many years. England was enjoying great prosperity as a direct result of the darkness of civil war in this country, and other countries in Europe were sharing in the benefits. Partly on this account, and partly on account of the old-time apathy, the United States contributed but a beggarly display to the whole. The entire area occupied by exhibitors from the United States was but 3,242 square feet. The classification was the same as at the last exposition, and the displays were very fine. The total cost of the buildings was about $1,605,000, and of the whole exposition about $2,300,000. Although the expenditures were liberal and even lavish, there was no deficit at the close of the enterprise when all expenses were paid. The total number of visitors was about 6,225,000, or an average daily attendance of some 36,500. In every way the affair was a success.

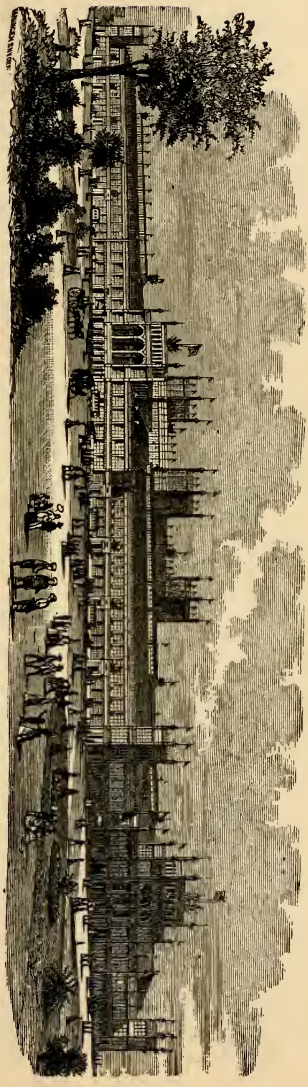
Without delay the French began the preparation of an exposition destined to outshine that of the English. The emperor was then at the summit of his glory. Paris had been rebuilt in magnificence, and was the handsomest city on the globe. The site selected for this world's fair was the historic Champs de Mars, about

37 acres in area. The general design provided an immense oval building arranged in twelve concentric aisles, with a small open centre garden. This building was 1,550 feet long and 1,250 feet wide, and covered about eleven acres. Other smaller buildings erected as annexes made the total area under roof about 35 acres. There was also an island measuring some 52 acres included in the grounds of the exposition, and devoted to agricultural and horticultural purposes. The whole park was beautifully ornamented, and all nations united in praising the exposition as the best there had ever been. It was opened by their imperial majesties, Napoleon and Eugenie, April 1st, and closed November 3, 1867. In that time it had been open to visitors 117 days, and they had flocked to it to the then unparalleled number of more than 10,000,000. There were some 50,000 exhibitors. The receipts were but $2,103,000, and the expenses were never made public, though it is certain that they greatly exceeded that amount. France enjoyed unparalleled prosperity for the next few years, however, and this was largely due to the results of the exposition, in spite of its deficit.

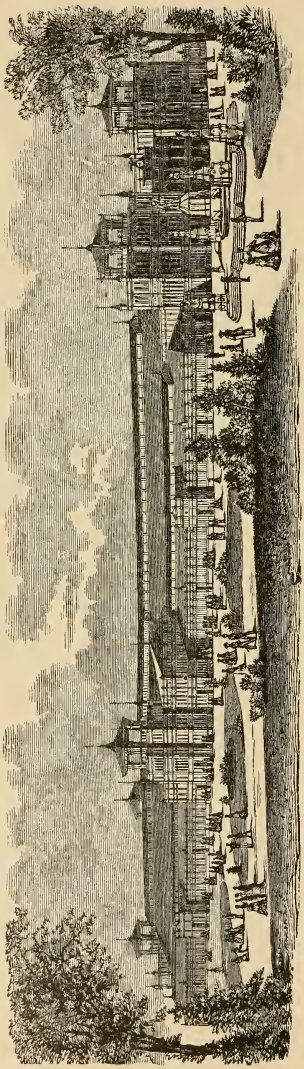
The Vienna International Exposition was opened in the Imperial park at Vienna in May, 1873. There was one great main building of enormous size, and numbers of smaller ones and annexes. There were some 70,000 exhibitors, of whom but 664 were from the United States. These, however, were successful in securing 442 awards, a pretty good proportion. The total cost of the enterprise was about $7,800,000, and there was a large deficit. Nevertheless, Austria felt that the indirect profit was very great.

The Centennial Exposition held at Philadelphia in 1876 is yet fresh in the minds of many of our people. In many respects it was the greatest that had ever then been held, and its results were very far-reaching. In a few weeks it did much to remove the unfavorable impressions existing against this country in the minds of Europeans. The great exposition was located in Fairmount Park, which was presented for the purpose, free of charge, by the city of Philadelphia. It was beautifully improved, and the space given to the fair was some 450 acres, of which more than half was fenced. Six large buildings and many small ones housed the exhibits here,

and they were all of marked architectural merit. In preparation for the enterprise, Philadelphia donated $50,000 for preliminary work. Congress passed a bill creating a Centennial Board of Finance, authorized to issue stock in shares of $10 each, the whole amount issued not to exceed $10,000,000. This had to be raised by private subscription. After persistent effort directed against Congress, a loan was made of $1,500,000, and this was afterwards paid back. The city of Philadelphia and the State of Pennsylvania each appropriated $1,500,000, and other States dealt liberally by the exposition. The amount spent on the government exhibit was $728,500. The total number of exhibitors was 30,864, a big increase over the 13,000 of London in 1851. The character and value of the exhibits, too, were far above those of previous displays. Out of the total, 8,175 of the exhibits were from the United States, and Spain came second, with 3,822. The Centennial opened May 10, 1876. From that time until November 10th, the day of closing, there entered the gates a grand total of 9,910,966 persons, of whom 8,004,274 paid admission fees which amounted to



CENTENNIAL EXHIBITION, 1876—MAIN BUILDING.

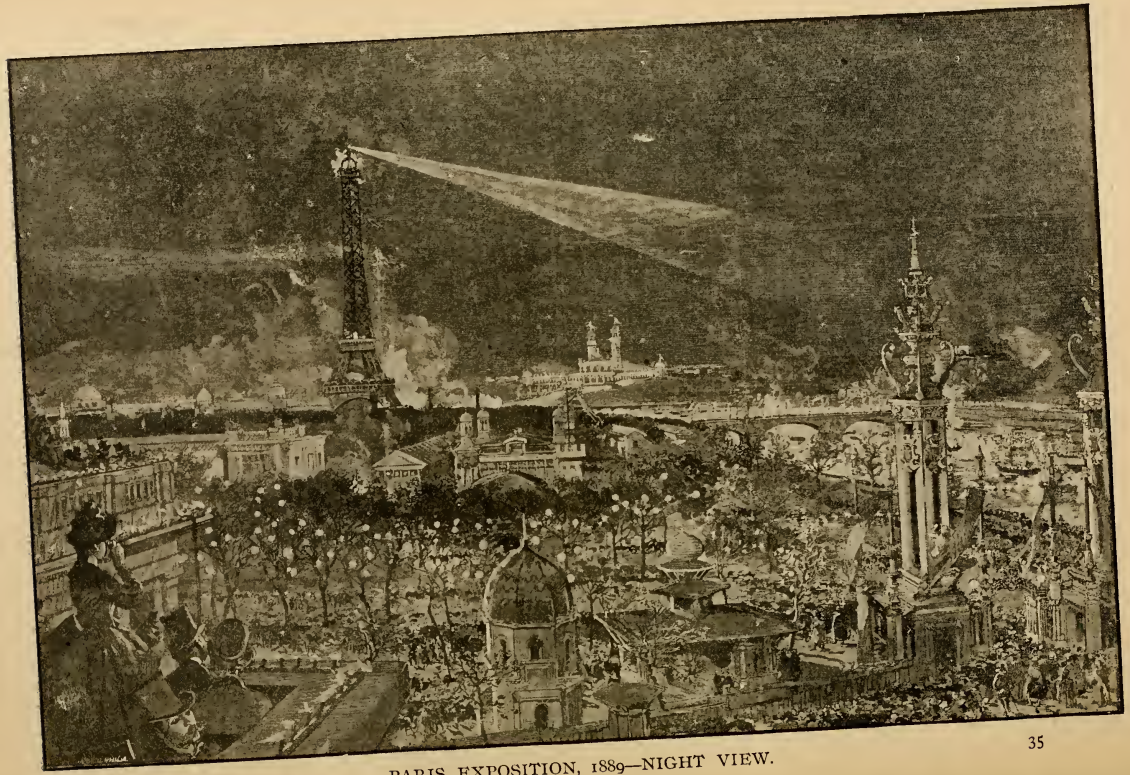


CENTENNIAL EXHIBITION, 1876—MACHINERY HALL.

$3,813,726.50. The daily average attendance, paid and free, was 62,333. The largest attendance was on Pennsylvania Day, September 28th, when 274,919 entered the enclosure.

The time for a few years before the opening of the Centennial had been one of great commercial depression in this country, and the date of the opening marked the very gloomiest of all the time. From that day, however, conditions began to improve, and that day is remembered as the turning-point of the financial crisis. The results of the Centennial were magnificent, and it will ever be remembered as one of the greatest events in the history of this country. As an exposition of the progress of arts, science and industry it had not before been equalled in the world.

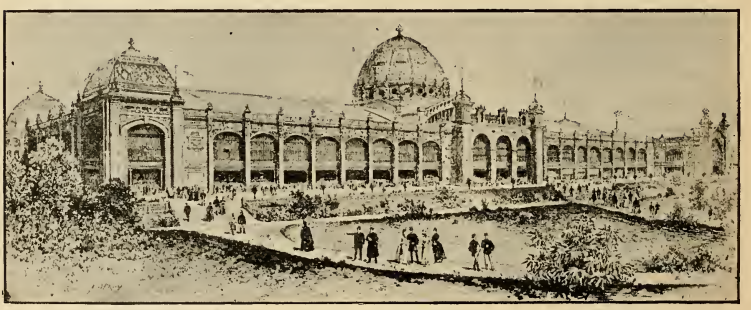
The French republic showed what it could do, when, in 1878, was held in Paris another great exhibition of the works of art and industry of all nations. It was less extravagant in expenditure, but in every respect was equal to the standard of excellence which had been established. Again the Champs de Mars was the site, and this time the space occupied on both sides of the Seine covered



PARIS EXPOSITION, 1889—NIGHT VIEW.

more than 100 acres. The United States this time formed one of the most interesting sections of the whole display, and included 1,229 exhibits out of a total of 40,366. This exposition opened May 1, 1878, and continued until October 10th. During this time the total attendance was 16,032,725, or an average of 82,650 a day. There was a large deficit in the running of the exposition, but, as before, it was believed that the indirect profits to Paris and to all France were great.

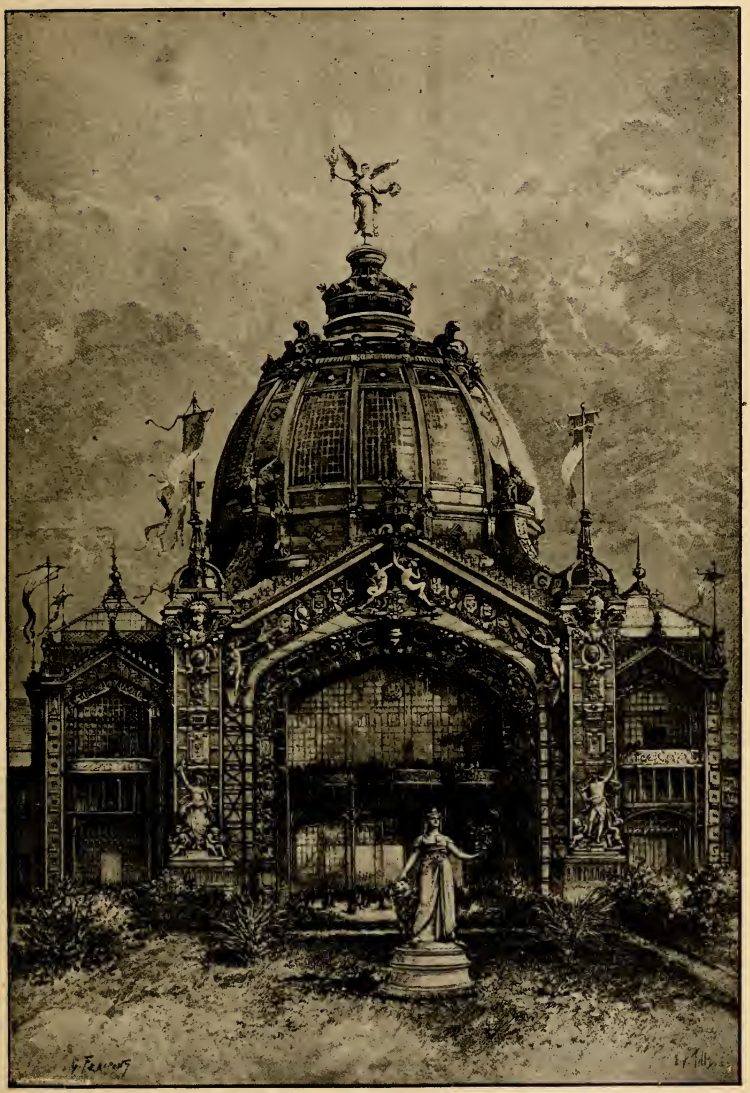
Two expositions were held in Australia within a year, and as first attempts both were considered to be highly satisfactory. One was at Sydney. It opened September 17, 1879, and closed April 20,



PARIS EXPOSITION, 1889—PALACE OF LIBERAL ARTS.

1880. Of course it was not profitable, but the attendance was about 1,200,000, and the success was gratifying. The other was at Melbourne and was on a larger scale. Here the buildings were pretentious and elegant, the exhibitors numbered more than 12,000, and every country of prominence was represented. The United States made an excellent showing here, and the result was a great increase in trade between the countries.

The greatest of all the international exhibitions ever seen by the world has been that held in Paris in 1889. It is the one with which all comparisons of the Columbian Exposition are made, and by its measure is the favor or disfavor credited. Its success was marked in every particular. In commemoration of the French revolution,

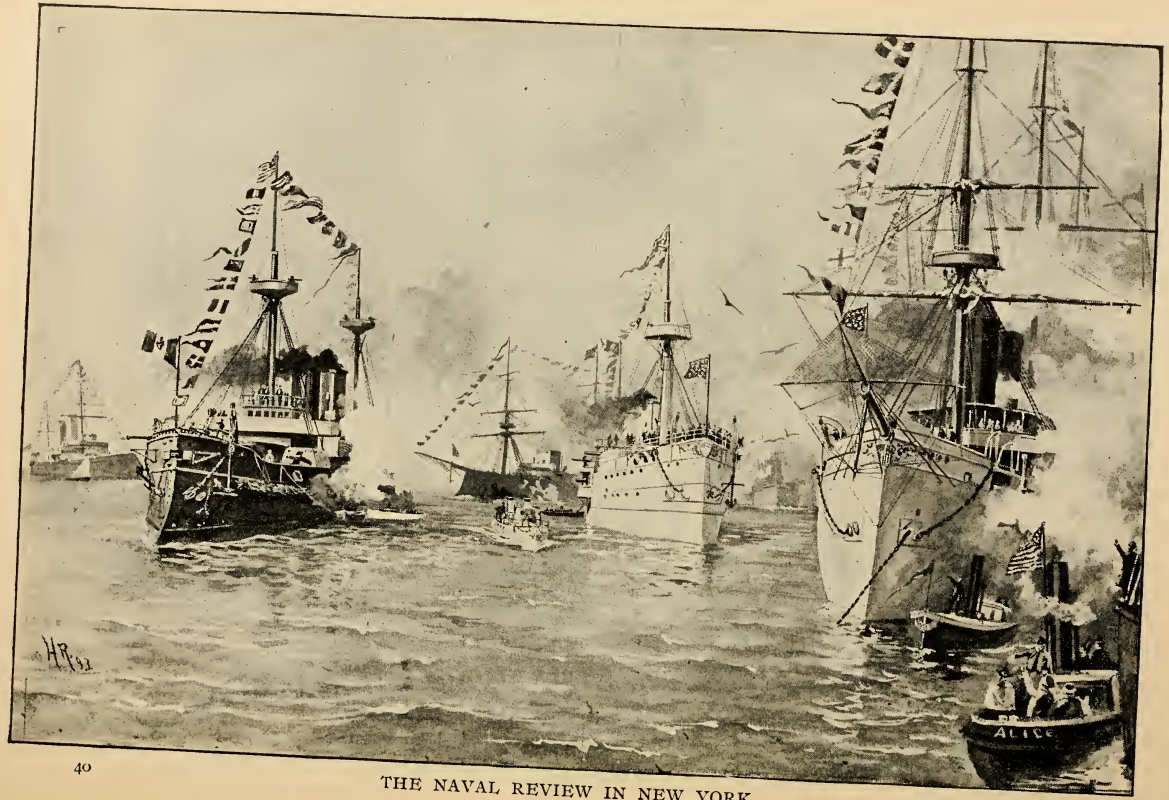


PARIS EXPOSITION, 1889, CENTRAL DOME.

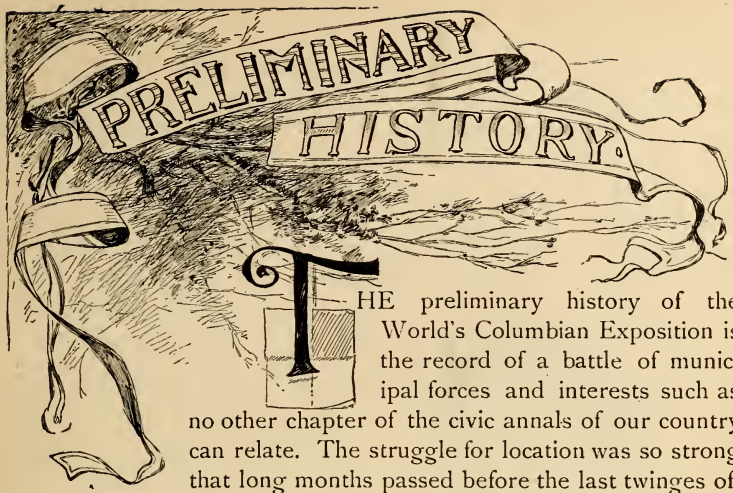
it was opened to the public May 5th. The receipts were nearly

EIFFEL TOWER, PARIS EXPOSITION, 1889.

$10,000,000 and the expenses but a little more than $8,000,000, so that there was a profit of nearly $2,000,000, something that had never been experienced before in the history of international expositions. The Champs de Mars was again selected for the site. A space of 173 acres was occupied, and this was covered with magnificent buildings. The Machinery Palace, the largest structure, covered eleven acres and cost $1,500,000. The Palace of Arts and the Palace of the French Section were but second to this, and were models of architectural beauty. The parks were magnificently decorated, and here the Eiffel tower was constructed. Fifty-five thousand exhibitors displayed their wares, and out of these no less than 1,750 were Americans. American exhibitors were granted 941 of the awards, and the showing was considered very creditable. More than 1,500,000 strangers visited the city of Paris, and the money expended by them, and added to the wealth of France and Paris, was enormous. All kinds of business prospered, Paris was in its glory, all France was proud. The world envied the magnificent showing made by the republic. That is the record set before the people of the United States to be excelled by the World's Columbian Exposition.



THE NAVAL REVIEW IN NEW YORK.



THE preliminary history of the World's Columbian Exposition is the record of a battle of municipal forces and interests such as no other chapter of the civic annals of our country can relate. The struggle for location was so strong that long months passed before the last twinges of jealousy might be said to have vanished from the inhabitants of some of the contending cities. The Fair itself is the culmination of years of work and planning, which began long before the general public was greatly interested in the work.

It seems impossible to verify any of the claims made by those who seek the honor of being named as the ones who first suggested the holding of an International Exposition to commemorate the discovery of America by Christopher Columbus. The claim is made by several different ones, and will doubtless never be settled. Numerous leading newspapers throughout the country long ago advocated the holding of such a quadri-centennial, and about the time of the Centennial Exposition at Philadelphia sentiment began to be formed in favor of the idea. In 1888 the subject began to attract serious interest throughout the country. It was soon evident that such an Exposition would be held, and the thing to be done, preserving the reputation of active American municipalities, was to compete for the location. Four great cities, New York, St. Louis, Washington and Chicago, were the competitors for the honor.

Similar methods of campaigning were adopted in each of the rival cities. In Chicago, the mayor, the Hon. Dewitt C. Cregier,

called a meeting of citizens to take action to secure the Fair, and this was the first official move in the contest that ended with Chicago's success. By authority of this meeting committees were appointed to assume charge of the organized effort which was to be made. Certain ones devoted themselves to the matter of public sentiment, and by means of the cordial assistance of the public press of the city spread far and wide the arguments why the city by the lake was the best of all for the site of the great exposition.

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D. H. BURNHAM, CHIEF OF CONSTRUCTION.

While this action was being taken, leading citizens of Chicago formed an incorporation under the laws of the State of Illinois, and this corporation, the World's Columbian Exposition, raised the sum of $5,000,000 in subscriptions of stock, besides pledging itself to double the sum for expenditure in building the Fair.

When Congress met in December, 1889, the seat of effort was transferred to Washington. Here powerful lobbies of the most prominent citizens of each of the competing cities presented the case to the representatives and the senators with every force and influence that could be commanded. Each of the four cities concentrated its efforts, and the battle was a fierce one. New York had certain claims which could not be overlooked, as the metropolis and the chief commercial city of the United States. Washington was the seat of government of the nation, and so claimed to be the proper place for such a celebration. St. Louis

demonstrated that there were more people living within the limits of a circle drawn with that city as a centre, and a radius of 500 miles, than in a similar circle drawn from any other city. Therefore it was supposed to be more accessible for the greatest number of people. Chicago claimed the best facilities and the best financial organization for the enterprise. She wanted to display to the world an American wonder, a city of a million and a quarter of inhabitants, and but half a century old. Philadelphia kept out of the contest, having had the Centennial but a few years before, but cast her influence with New York. The eastern cities all argued that people from the old world would not come so far as to Chicago or St. Louis, and that the Fair should therefore be kept near the ocean.

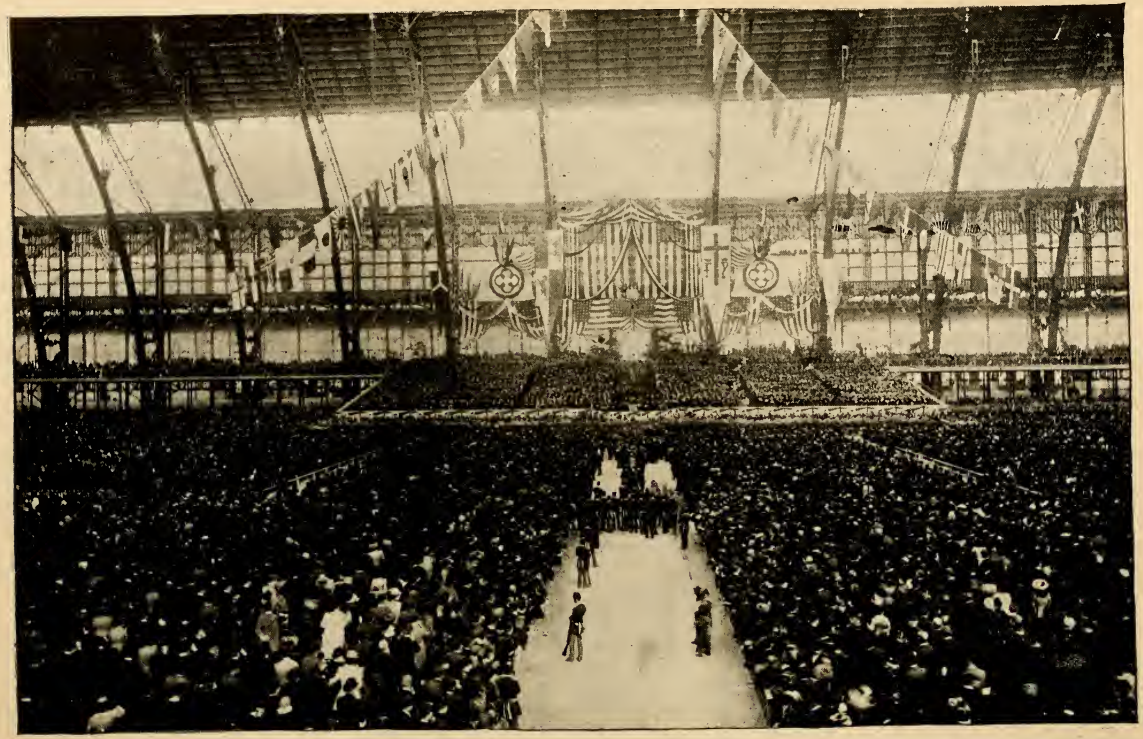
Every one knows the result. Chicago's arguments were powerful, and she was successful. The friendship of the country was with her, except in the case of the parts directly depending on the competing cities, and her superiority in many respects as a place for holding the Exposition was generally admitted. On the first ballot taken by Congress for location, Chicago led New York by more than 40 votes. On the eighth ballot the votes for Chicago were 157, for New York 107, for St. Louis 25, and for Washington 18.

Senator Daniel, of Virginia, introduced in the Senate, in March, 1890, a bill to provide for the holding of the Exposition at Chicago. A special committee of the two houses reported a bill that passed, and the signature of President Harrison was attached to it, so that it became a law, on the twenty-fifth of April, the same year. The act was entitled: "An act to provide for celebrating the 400th anniversary of the discovery of America by Christopher Columbus, by holding an International Exhibition of arts, industries, manufactures and the products of the soil, mine and sea, in the City of Chicago, in the State of Illinois." This act provided for the appointment of a national commission, to be designated as the World's Columbian Commission, to be composed of two commissioners from each State and each Territory, and from the District of Columbia, and eight commissioners-at-large. Those from the States

and Territories were to be appointed by the governors, and the others by the President. Their compensation was to be but $6 per day, and actual travelling expenses. After all were appointed, they were to meet in Chicago, and organize for business. At this time they were to accept such site and plans as were submitted to them by the local corporation, provided that corporation give evidence of the possession of a *bona fide* subscribed capital stock of $5,000,000, and that it can secure the same amount additional. This commission was directed to determine the plan and scope of the Exposition, allot space for exhibitors, prepare a classification of exhibits, appoint judges and examiners, and generally have charge of all intercourse with the exhibitors and the representatives of foreign nations. It was also required to appoint a board of lady managers. The act directed that the buildings should be dedicated with proper ceremonies October 12, 1892, and that the Exposition should open the first of May, 1893, and continue for the term of six months. When the President should be notified by the commission that the preliminary arrangements were complete, he should invite the nations of the world to join in the Exposition. The act also provided that there should be a naval review in New York harbor in April, 1893, to which ships from all the navies of the world should be invited. This outlines to a certain extent the scheme for government of the Fair, the more complete description of which is found in the later chapter on Administration.

The act of Congress was fulfilled in every particular.

The calendar of the Fair thus resolves itself into three notable, epoch-marking dates, or periods. The first was the time of dedication, the ceremonies on this occasion continuing during three days, Thursday, Friday and Saturday, the 20th, 21st and 22d of October, 1892. The second was the great naval review held at New York, through several days in the latter part of April, 1893. This was provided for in the act of Congress creating the Exposition, and so belongs to the history of the great enterprise as part of the preliminary celebration. The third and most important of all the dates in the calendar of the Fair is May 1, 1893, on which day the gates



THE DEDICATION CEREMONIES—OCTOBER, 1892.

were at last thrown open to the public, and the great exhibition presented to history.

The week of dedication was an eventful one in Chicago. For a long time before the city had been decking herself in gala attire, and when the morning of October 20th dawned on the giant city of the west everything was in readiness. All over the city a wilderness of flags waved in the wind, and banners and streamers made the streets gay with color. Chicago had adopted for a municipal flag a graceful design of terra cotta and white, and numbers of these were interspersed with flags of all the nations of the globe. On that day all traffic was forbidden in the streets of the business centre of the city, so far as it required teams and wagons, and so, the stillness was something remarkable—as observed by one who had been accustomed to the roar and bustle of the great city. Throngs of gayly dressed people crowded the streets, from curb to curb, and seized on every point of vantage whence they might best see the glories of the parade. Hundreds of thousands of persons, from within and without the city, cheered and gloried when the magnificent procession at last began to pass. The line of march was many miles long, and for hours the societies forming it passed the reviewing stands. Never since the day of the Chicago fire, when every one was in terror and hastening to save life and property, had the business of the city been so absolutely suspended. Once it was for stern danger and necessity. Now it was to rejoice over the progress of the world, shared in so full a degree by that once-stricken city.

This one was the civic parade through the business portion of Chicago. The governors of the States and Territories, with their staffs, rode at the head of the procession in the order in which the States were admitted into the Union. There were symbolical floats without number, and everything else that could give interest to such a cavalcade.

The next day was the day of importance at the Fair, as Thursday had been in the heart of the city. It was dedication day, the anniversary of the landing of Columbus. A military parade composed of the officials and guests taking part in the ceremonies, escorted

by cavalry and artillery, marched to the grounds and entered the great building of Manufactures and Liberal Arts, where the exercises were to be held. The actual ceremonies began at 1:30 o'clock in this building. The programme was arranged as follows:

1. "Columbus March," composed by Professor John K. Paine, of Cambridge.

2. Prayer by Bishop Charles H. Fowler, D. D., LL. D., of California.

3. Introductory address by Director-General Davis.

4. Address of welcome and tender of the freedom of the city of Chicago, by the Hon. Hempstead Washburne, Mayor.

5. Selected recitation from the dedicatory ode, written by Miss Harriet Monroe, of Chicago; music by Mr. G. W. Chadwick, of Boston; reading by Mrs. Sarah C. LeMoyne.

6. Presentation by the Director of Works of the Master Artists of the Exposition, and award to them of special commemorative medals. Music: "To the Sons of Art."

7. Address, "Work of the Board of Lady Managers," Mrs. Potter Palmer, President.

8. Tender of the buildings, on behalf of the World's Columbian Exposition, by the president thereof, to the President of the World's Columbian Commission.

9. Presentation of the buildings by the President of the World's Columbian Commission to the Vice-President of the United States for dedication.

10. Dedication of the buildings by the Vice-President of the United States.

11. "Hallelujah Chorus" from the "Messiah." Handel.

12. Dedicatory oration, the Hon. Henry Watterson, of Kentucky.

13. "Star Spangled Banner" and "Hail Columbia," with full chorus and orchestral accompaniment.

14. Columbian oration, the Hon. Chauncey M. Depew, of New York.

15. Prayer by His Eminence, Cardinal James Gibbons, of Baltimore.

16. Chorus, "In Praise of God." Beethoven.
17. Benediction by the Rev. H. C. McCook, of Philadelphia.
18. National salute.

The arrangements of the great building were such that more than 100,000 persons were seated during the exercises, and as many more found ample standing room within the walls of the ponderous structure. Everything passed off in entire perfection.

DUKE OF VERAGUA.

The same evening at the Auditorium were held the dedicatory exercises of the World's Congress Auxiliary, that great co-ordinate body with the Exposition. On this occasion the oration was delivered by His Grace, Archbishop John Ireland.

The following day the ceremonies concluded with the dedication of a number of the State Buildings at Jackson Park, and military manœuvres in Washington Park.

There were also fine fire-works in the evening at several of the parks of the city. The week had ended with nothing to mar the pleasure, and it was a glorious success.

Six months later the Atlantic coast was the scene of the greatest naval pageant that these waters had ever known. The President invited all the nations of the world to participate in it, and the invitation was accepted by many of them. Early in the month of April the vessels from the navies of the world began to rendezvous at Hampton Roads, and when all had gathered, in stately line of

THE OPENING EXERCISES—PRESIDENT CLEVELAND TOUCHING THE ELECTRIC BUTTON.

march, the monarchs of the water sailed northward until the harbor

of New York bay was reached. Here, for days, they manœuvred, paraded and saluted, until at last, when the review was ended, and every ceremony had been completed, they once more dispersed for their home stations, and the greatest naval review on American waters had passed into history.

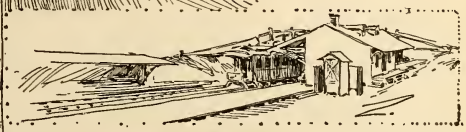
THE INFANTA EULALIA.

The next epoch in Exposition history was the date that marked its opening, May 1, 1893. The President of the United States and the Duke of Veragua, the lineal descendant of Columbus, were the guests of honor on this occasion. A parade formed and escorted these and other distinguished personages to the Fair grounds, and thence to a grand stand that had been erected for the purpose to the east of the Administration Building, facing the Grand Plaza and the Basin. This was thronged with high officials of this and other nations, and the array of notabilities was astonishing. To the east they faced a grand sight. A hundred thousand persons were crowded into the Plaza, eager to see all that was to happen. Praise by song, a prayer, and a poem opened the ceremonies. Then the Director-General of the Exposition spoke briefly, and he was followed by the President of the United States. As he finished his short address he touched an electric button on a table before him. Instantly there was a flash of color from a thousand staffs crowning the great buildings. From them waved,

as by a miracle, flags of every nation. Bands began to play, steam whistles to blow, vessels in the harbor to fire salutes from their guns, and from the mighty throng went up that grandest of songs that ever rises from earth to heaven, the cheers of a multitude for a work that is grand and good. Every wheel of all the great machines began to turn as if by magic. The World's Columbian Exposition was opened, the preliminary history of it was done. All the labors of years were for an instant forgotten in the glorious triumph of man's effort, and the payment for toil and anxiety and rebuff was all received. Then there was no thought of means and plans which had resulted in this success. The multitude only stood amazed to see what had been accomplished. So we will leave to future chapters the story of the work that was done to make this Exposition an accomplished fact. The remaining history of the Fair is a record of fête and festival. The visit of royalty in the person of the Infanta Eulalia, of Spain, the arrival of the Columbus Caravels and the Viking Ship, the celebrations on special days, the destruction of the Cold Storage Building by fire, were events of more than passing interest.

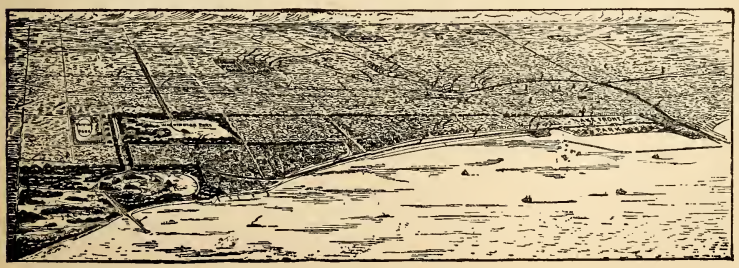
152 COUNTY BUILDING AND COURT-HOUSE, CHICAGO.

Site and How to Reach it.



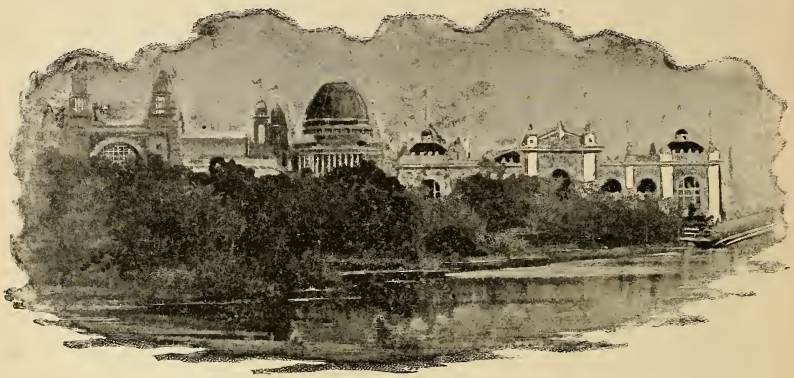
IF there be one feature of the World's Columbian Exposition as it exists to-day, in the description of which superlatives fail to be strong enough, it is the site of the scene of splendor. And the marvel is even greater to those who have been familiar with the growth and development of the enterprise from beginning to end, than to those who now see the beauties for the first time. For the latter know not the stupendous undertaking of preparation, while the former remember the sand dunes and the marshes swept by the waves of Lake Michigan, which but two short years ago formed the landscape that is now the Mecca for the wanderers of the world.

To obtain a just idea of the site of the Exposition, it is well that one should first know, in a general way, the form of the city of Chicago itself. This city of more than a million and a quarter inhabitants is situated on the west shore of Lake Michigan, near the southern extremity of the great body of water. Following the curve of the lake, which but a few miles farther meets its eastern shore,



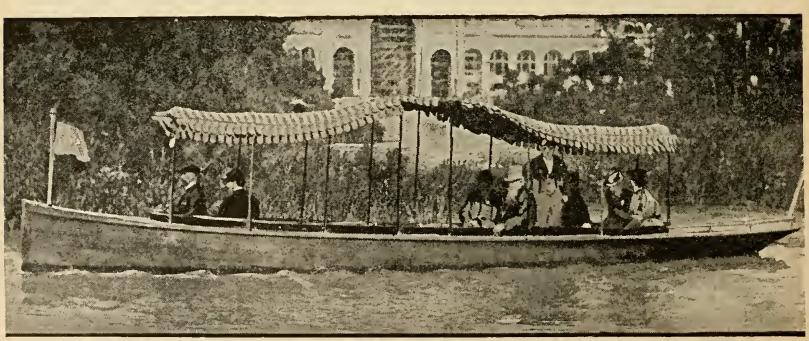
BIRDS-EYE MAP OF CHICAGO.

the city broadens toward the south. At the northern end of the city it extends seven miles back from the shore, while eighteen miles



THE NEW WHITE CITY—JACKSON PARK.

to the south it is nearly twice as wide. From this point southward, however, an irregularity of the western boundary again narrows the city. From north to south, the total limits of the corporation are

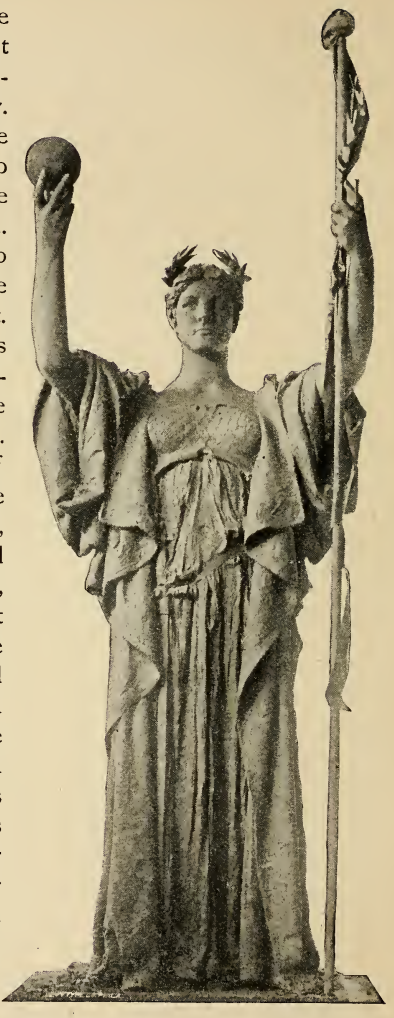


AN ELECTRIC LAUNCH AT THE FAIR GROUNDS.

twenty-four miles. The business centre of the city is about one-third of the distance from the north end, and close to the lake. At this point there flows into the lake the Chicago river, a sluggish

OWINGS BUILDING AND POST-OFFICE, CHICAGO.

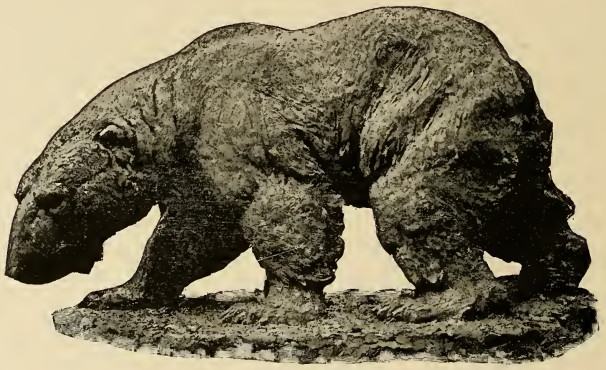
stream, in looks little more than a huge open sewer, but of vast importance to the commercial life of the great city. At a point one mile west of the lake the river is formed by two branches, one flowing from the north and one from the south. The sources of these two streams are a few miles to the northwest and the southwest. Thus is explained the divisions into which the city has naturally fallen, the West side, the North side and the South side. The commercial interests of the city then centre in the pocket formed by the river, and here are the great retail stores, the wholesale stores, the banks, and the offices. But in each of the divisions are large business enterprises, and in each of them may be found magnificent homes and large quarters where the best and most intelligent of the citizens dwell. So that while there is some sectional jealousy, or more properly pride, among the residents of the different divisions, each loyal to the side on which he lives, there is no exclusiveness, and on each side of the city are hosts of attractions worthy the attention of the stranger within the city.



STATUE OF THE REPUBLIC—GRAND BASIN.

THE AUDITORIUM, CHICAGO.

Encircling the older portion of the city is a system of parks and boulevards which when completed will rival those of any city in the world. On the shore of the lake, at a point but a short distance north of the business centre, begins the Lake Shore Drive, a magnificent boulevard, which extends along the water's edge nearly two miles to Lincoln Park, the most highly improved of all in the system. From this green spot in the heart of the city runs another drive; Humboldt Boulevard extends west and south five miles to Humboldt Park. This connects by Central Boulevard with Garfield

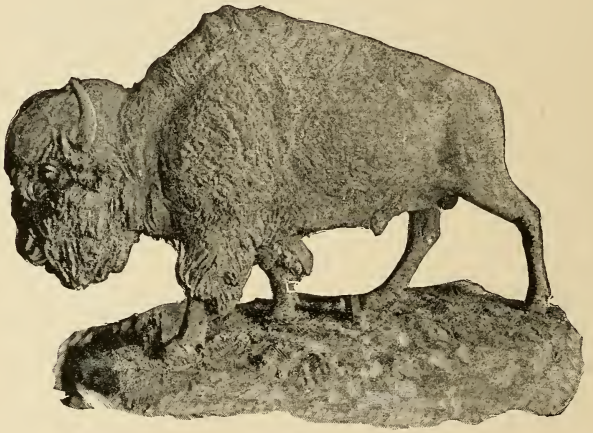


POLAR BEAR—ON BRIDGES. (*A. P. Proctor.*)

Park, and this by Douglas Boulevard with Douglas Park. These three latter parks are all in the western part of the city, in successive order from north to south, and some four or five miles from the lake. Other boulevards running south and east from Douglas Park finally reach, after a course of several miles, Washington Park, the oldest and best improved of all on the South side. This is six miles from the business centre, and directly south of it, so that the visitor has now encircled the city, starting from Lincoln Park two miles north of the business centre. At the south end of Washington Park there extends eastward, for a mile, a strip of land 600 feet in width, a part of the park system, called Midway Plaisance. At its eastern extremity it joins Jackson Park, which lies on the lake

shore, seven miles from the mouth of the Chicago river and the business centre. Here is the World's Columbian Exposition.

When the site for the Fair was finally selected, those in charge of the enterprise looked about them to find how much preparation would be needed before the grounds would be ready for the erection of buildings. Here is the condition of things as they found them. Jackson Park is beautifully situated on the lake shore, in shape something like a right-angled triangle. The waters of the lake form the hypothenuse, Stony Island Avenue the perpendicular,



BULL BUFFALO—ON BRIDGES. (*Edward Kemeys.*)

and Sixty-seventh street the base, the apex being at Fifty-sixth street. The park does not, however, come to a point, but at this narrowest place is about a quarter of a mile in width. At the base line it measures just one mile, on the perpendicular a mile and a third, and on the hypothenuse more than a mile and a half. Within these limits are contained 526 acres, every inch of which is now utilized most perfectly for the purposes of the Exposition. Midway Plaisance, a part of the Exposition grounds, contains 80 acres more. When control of this area was assumed by the officers of the World's Columbian Exposition they found less than one-fourth of

the whole in a state available for use. This was the northern portion of the park proper, where the park commissioners had cultivated lawns and constructed driveways, a lake, and a pavilion for recreation. This was known as the improved portion of the park, in contradistinction to the other or unimproved portion. The latter was in a state of nature. Sand hills and vales and marsh grass and swamps were the only features of the land and water-

LION—BEFORE OBELISK. (*Waagen.*)

scapes. For centuries powerful Lake Michigan had met no obstacle in the attack, and had cast up drift-wood with the sand, until there was no semblance of the black soil of the Illinois prairies to indicate fertility. Among the sand dunes were sink-holes of quicksand and of swamp, and the careless pedestrian might find himself in actual danger in the course of a walk across the tract.

How different is all this now! Where once was rank grass of the marshes is to be seen the most luxuriant of green turf. Where the path was rough with the rise and fall of the shifting sand

are level parkways, vistas of sylvan beauty, terraces of most artistic conception. Where was then a rough and wave-beaten shore,

MOUNTAIN GOAT—ON BRIDGES. (*A. P. Proctor.*)

strewn with the refuse of a generation's drift, is now a sea-wall of stone, a pavement of the same unyielding material, and the beauty of cleanness and purity. Where was then a marsh, whose stagnant waters were divided but by hummocks of mud and sand, are now the clear flowing waters of the beautiful system of lagoons, and, rising out of them, the walls of a city of white palaces, the architectural triumph of modern history.

What of the minds that planned and the hands that worked to accomplish this work of pride?

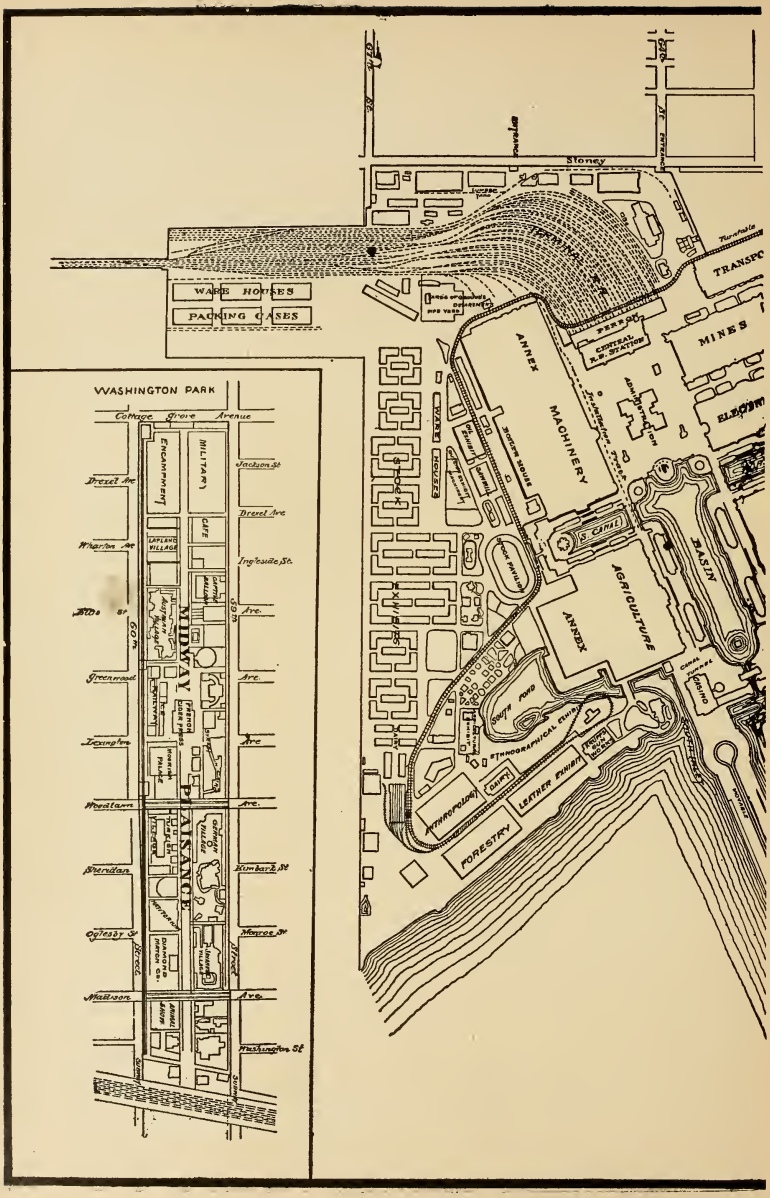
The creation of the design and plan for the Fair, thus including the location of all the buildings, was assigned to the men who had proven by past work their capacity for such a task. Messrs. Burnham & Root, one of the largest and most prominent firms of architects in Chicago, and Frederic Law Olmstead, the great landscape architect of Boston, were thus chosen. The general outlines of the grounds were decided upon, and the labor of preparation put under way. Mr. Root, a master mind in his profession, died soon after the work began, but will always be remembered for the ideas carried to completion by his successors. As an instance of the breadth of

mind with which the preliminaries of the Exposition were carried on, it is interesting to note that the drawing of designs for all the large buildings of the Fair was assigned to eminent architects in some half dozen cities of the United States, and their interests thus enlisted in favor of the enterprise. The talent secured was therefore of the best.

With the planning of the buildings thus provided for, the task on hand was to prepare the grounds for them. Contracts were let, which provided for the grading of the tract, and the dredging of the lagoons. Over a large portion of the park there had accumulated, by the decay of centuries of vegetation, and the help of the winds, a thin layer of rich black soil. This must be preserved, for it was too rare to waste. So the whole surface was scraped, and the scrapings from this inch or two of loam piled in a remote corner of the park where it would not be disturbed. Then the dredges and the plows and the scrapers went to work, manned by thousands of brawny men, and within a few months the face of the park was transformed. Hillocks and valleys and lagoons were made, and islands in the midst of the system of waters. As fast as the area of one building's site was ready construction was begun, and before long there arose within the park a wilderness of scaffolds and walls. The grading once finished, the piles of earth which had been so carefully preserved were again attacked, and the rich soil scattered all over the park, at the proper thickness to sustain vegetation, though a great quantity of it had to be shipped in from a distance.

It is impossible and needless to follow the course of construction little by little. Railway tracks threaded the grounds from every direction; an army of workmen kept busy day and night; every man whose interests were with the Exposition gave his best thought and effort to its advancement.

Finally came completion, dedication, and opening. What was placed before the eyes of the millions of visitors, who view with delight the wonders of the Fair, is here recorded. In other chapters each building is given careful description, and the notable exhibits contained in it are told. But the outer embellishment of the grounds properly belongs in this place.



WARE HOUSES
PACKING CASES
Stoney
Turntable
TRANSPO
MINES
ELECTRI
ANNEX
MACHINERY
ADMINISTRATION
Transportation Trade
WARE HOUSES
BOILER HOUSE
STOCK EXHIBITS
S. CANAL
BASIN
AGRICULTURE
ANNEX
CANAL SUNNEL
CASINO
SOUTH POND
ETHNOGRAPHICAL EXHIBIT
ANTHROPOLOGY
DAIRY
LEATHER EXHIBIT
FORESTRY
WASHINGTON PARK
Cottage Grove Avenue
Jackson St
Drexel Ave
Drexel Ave
Wharton Ave
Ingleside St.
Ave.
Greenwood
Ave.
Lexington
Ave
Woodlawn
Ave.
Sheridan
Kimbark St
Oglesby St
Monroe St
Madison
Ave.
Washington St
ENCAMPMENT
MILITARY
CAFE
LAPLAND VILLAGE
MIDWAY
PLAISANCE
GERMAN VILLAGE
DIAMOND MATCH CO.
ANNEL SHUTE
Street
Street

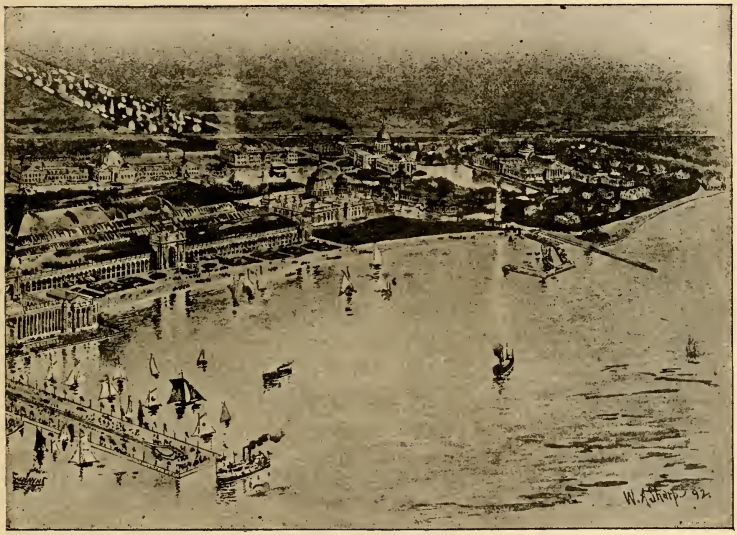
ILLINOIS CENTRAL RAILROAD
Island
WOMEN'S
HORTICULTURE
Wooded Island
Rose Garden
LAGOON
STATION
CITY
U.S. GOVERNMENT
Government Piers
MANUFACTURES and LIBERAL ARTS
FISHERIES
ILLINOIS
FOREIGN
GALLERIES OF FINE ARTS
Cornell Ave.
Eastlake Ave.
Everett Ave.
LAKE MICHIGAN
MAP OF THE
BUILDINGS & GROUNDS
OF THE
WORLDS COLUMBIAN EXPOSITION
AT
1893.
CHICAGO, ILLS. U.S.A.
JACKSON PARK & MIDWAY PLAISANCE

The artistic centre of the whole Fair is the Plaza and the Grand Basin, bounded by the Machinery, Agriculture, Manufactures, Electricity and Mines Buildings, and the Terminal station and Peristyle. In the centre of the Plaza stands the Administration Building, and around it are grouped much of the choicest decorative pieces of all. Just to the east of this structure is the Columbian Fountain, the gem of all, designed by Frederick MacMonnies, and executed by him at

BIRD'S-EYE VIEW

his studio in Paris. It resembles closely in symbolical design a remarkable sketch alleged to have been made by Columbus himself, and yet preserved. The centre part is designed as a mediæval barge, drawn by huge sea-horses, frothing and spouting foam and sea water, and by centaurs bestridden and urged on. Enthroned and above all sits Columbia, majestic in dignity and pose, the personification of liberty, freedom and power, with Father Time as steersman. Assisting in the propulsion of the ship of state are four female figures on either side, representing the arts and sciences,

gracefully pulling huge sweeps or oars. At the bow of the barge, Fame, a beautiful female figure, with a herald's trumpet in hand, proclaims the advent and progress of the nation. The motto, "E pluribus unum," is engraved on the pedestal supporting the principal figure. The work is marvellous in conception and in execution. It is snowy white, to match the other beauties of the fairy city, and its greatest beauty is seen at night, when the electric fountains on either side



OF THE FAIR.

are playing, and the intense rays of the search lights are cast upon it.

The electric fountains are other decorations whose best beauty is at night. Through hundreds of jets the water pours far into the air, illuminated by electric light cast through globes of many different colors. The effect is dazzling and enchanting.

Far at the other end of the Basin is the great statue of the Republic, designed by Daniel C. French, of New York. This figure is sixty-five feet in height, and of perfect symmetry. The arms and

hands are upraised above the head. In her right hand she holds a globe on which an eagle rests with outstretched wings. The left hand carries a staff with a Phrygian cap, the symbol of liberty. On the head is a wreath of laurel leaves. The heavy robe is open in front, and reveals a breastplate of armor, and a sword half hidden by the drapery. The statue is made of plaster and gilded. Inside the statue is a stairway, by which the attendant goes to the top, to light and care for it. The total weight is thirty-five tons. Its size will be seen by the fact that the arms are thirty feet long, the nose thirty inches long, and within the hand is room to hold four men of ordinary size. So perfectly proportioned to its surroundings is it, that one loses sight of its enormous size, and sees but its beauty and grace.

The Grand Basin and the North and South Canals, which extend at right angles from it, are treated in terraces, with bevelled lawns, and elaborate balustrades of white, massive and classic. On their posts are great pots of cacti, and below are roses and other flowers and plants. At the southern extremity of the Canal is the Lion fountain and Obelisk, a design of great beauty, and one of the most artistic conceptions on the grounds. It represents one of the ancient obelisks of Egypt, and is guarded by four lions, of which M. A. Waagen is the sculptor. Just behind this, and connecting the Machinery and the Agriculture Buildings, is the classical Colonnade, designed by C. B. Atwood, as a screen for the intramural station, and the Live Stock Pavilion. It is graceful and beautiful.

Two classes of sculpture are yet to be mentioned, of those encircling the Basin. They consist of a series of native American wild animals, modelled by Edward Kemeys and A. Phimister Proctor, and a series of six rostral columns designed and executed by Johannes Gelert. The animals surmount the bridges that cross the canals, and thus have a location that is unsurpassed. Those of Mr. Kemeys are "Old Ephraim," a male grizzly guarding the approach to his lair; "A Grizzly. Grave Digger," who is playing with the head of a wild sheep she has before buried and has now disinterred; "A Prairie King," a bull buffalo walking around the outskirts of his herd, to guard against threatened danger; "At Sound of the Whoop,"

a cow buffalo, standing at the first signal of danger, to guard her calf; "The Still Hunt," the figure of an American panther crouching ready to spring; "At Bay," a female panther ready to defend her lair against an attack. All of these beautiful works are so posed as to give the appearance of watching the approaches to the bridge.

The work of Mr. Proctor, which is of equal merit, consists of moose, elk and polar bears. Two sullen moose guard the bridge

HUNTER'S CABIN, WOODED ISLAND.

leading to the Agriculture Building, and a number of elk are placed on bridges in various parts of the grounds. Two polar bears watch another bridge, and seem to be looking across an imaginary field of ice for seals or explorers. Mr. Proctor is also the sculptor of the lions which guard the treasures of the Fine Arts Building. But his most important works here are the equestrian statues decorating the landing in the lagoon opposite the Transportation Building. One is a cowboy, not the eastern ideal but the western reality. He sits on a typical bucking broncho which he is curbing, and is in

every way a most worthy representative of his kind. His companion is an Indian, mounted on a pony, which is standing silent while the rider gazes from under his shading hand, to see what is before him on the prairie. The pose and the details are all perfect.

TERMINAL STATION.

Facing the waters of the Basin and Canals, opposite and adjoining the Agriculture Building, are oxen and draught horses, beautifully sculptured and of large size.

In addition to the outdoor sculpture already named there are other features, such as fountains and ornamental figures, of lesser importance, scattered over the grounds, in many places. Every care has thus been taken to make a pleasure ground that would be as delightful outside the buildings as within them. Beautiful flowers and grass plots meet the eye everywhere, and nothing is left undone that can add to the attractiveness of the scene.

Now all of these splendors would be as naught if they were so far from means of communication as to be out of the reach of quick and easy travel. It is consequently interesting to note the means of communication furnished the public to come to the Fair. The transportation facilities are better in every way than have ever been provided at any previous exposition. From the Lake Front Park,

which may be termed the down-town entrance of the Fair, there are a number of ways to reach the grounds, all safe, speedy and pleasant. First comes the express service of the Illinois Central railway. Trains start from the down-town station at Van Buren street every few minutes, and reach the grounds without any stop, after a run of some fifteen minutes. Once at Jackson Park the passenger may leave the train at Sixtieth or Sixty-third street, or ride directly into the grounds, to be nearest to the Administration Building and the centre of the Fair. This last stop is at the entrance to the Terminal station, a grand depot within the Exposition

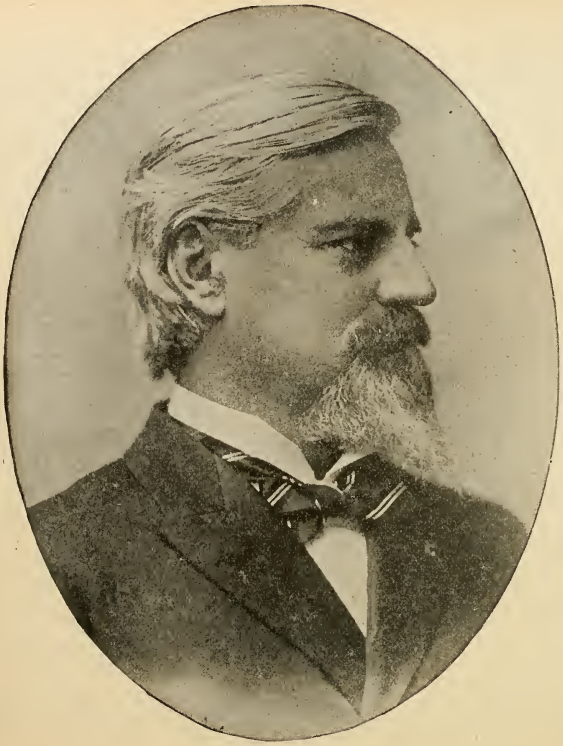
INTERIOR OF TERMINAL STATION.

grounds. This structure lies due west of the Administration Building, and forms the western boundary of the Court of Honor. It was designed in the mixed Roman-Corinthian style, by Mr. C. B. Atwood. The station is divided into three sections, the central portion being 200 feet long. This forms the great vestibule through which trains

are emptied. The eastern and western sections are three stories high, and contain the waiting-rooms, check-rooms, lunch counters, and general railway and custom house offices. On the second floor, the full circuit of the central section, is an immense gallery, 25 feet wide, and 600 feet long. Above it, a frieze of clock faces, twenty-four in number, shows the time in the principal cities of the world. Three grand loggia open to the east. There are ladies' parlors in this building, and all sorts of comforts for the travelling public.

The passenger from the city may find within a few hundred yards from the Illinois Central Station, the station of the elevated railway company, and these trains will also convey one within the walls of the Exposition. The station where they unload their passengers is on the roof of the annex to the Transportation Building, and adjoining the station of the elevated Intramural railway. A line of fine steamships furnish another means of communication with the park. They sail from a pier adjoining the Illinois Central Station, and land at the great pier which extends into Lake Michigan from the Peristyle eastward. The Movable Sidewalk enables one coming to the grounds this way to enjoy a novel mode of travel. It runs the length of the pier, and is one of the curiosities of the Exposition. Last of all, the passenger may take the cable lines from the business centre of the city, and reach the Fair after a ride through the residence district. Two lines are in this service, and there is still another railway line, running from the west side of the city, and supplying service for the residents of that vicinity. Altogether the capacity of transportation to and from the World's Fair is estimated to be about 110,000 per hour, by these means, and many thousands of others who reside or board near the Fair, and are within walking distance, may be added to that number. There is no difficulty, then, in transporting to the Fair all who may want to attend on any day. Thus it is seen that everything that needs to be considered has been arranged to give to visitors the greatest pleasure, and to do it with greatest ease and comfort to them. That is the spirit of the Exposition.

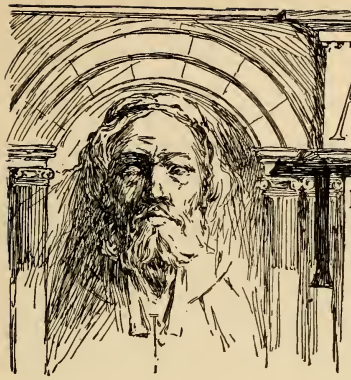
A CHICAGO STREET.



GEORGE R. DAVIS.

THOS. W. PALMER.

The Director-General and the President of the National Commission.



ADMINISTRATION

THE tale of the World's Columbian Exposition is in great part a record of magnitudes. Comparisons wherever made are the most certain proofs of the enormity of the undertaking. It is a fact that the room required for the conduct of the business interests of the Fair is greater than that occupied by the governments of some of the great States of the Union, and the force of employés, even outside the army of laborers who performed the manual labor of building the Fair, is of astonishing number. During the period before offices were prepared in the new buildings at Jackson Park, when all the work of administration had to be done in the business heart of Chicago, offices were secured in the great Rand-McNally building on Adams street, and there was a hive of industry for more than two years before the last of the transactions could be pursued at the park. During the greater portion of this time two floors were thus occupied at a rental of some $30,000 a year. At the earliest possible moment the offices of the Department of Construction were moved to the park, and in succession, as the various buildings were finished, the chiefs of the different departments changed their quarters, until by the time when the Administration building itself was finished, and ready to be occupied by the executive officers and for other purposes, the old rooms, about which so many memories of the Exposition must always hang, were almost all vacated. At the end of the period of construction there were but few representatives of the Exposition remaining there, these being the ones who have most frequent occasion to transact down-town business.

It is of course in the Administration Building that the business

ILLINOIS STATE HISTORICAL LIBRARY
OLD STATE CAPITOL

life of the World's Columbian Exposition centres. Here are the offices of the most prominent of the executive officers, the ones

WAR, ADMINISTRATION BUILDING. (*Karl Bitter.*)

who have the burden of the responsibility on their shoulders. The building contains no exhibits, except as the decorations of painting

and sculpture are exhibits for the visitors to the building itself. But its commanding position in the most favorable location within the grounds, and its magnificent architectural proportions, combined with its official importance, act to make it the most prominent of all the buildings of the Fair, and to secure for it the

DIANA, ADMINISTRATION BUILDING.
(*Karl Bitter.*)

FIRE UNCONTROLLED, SOUTH ENTRANCE ADMINISTRATION BUILDING.
(*Karl Bitter.*)

encomiums of architectural experts for its beauty and perfection. Such a structure is worthy of extended description.

The Administration Building stands in the centre of the Grand Plaza, and is at the same time the centre of the architectural features

of the Fair. This Plaza is a great open space, rectangular, and bounded on the north by the Mines and Electricity Buildings, on the west by the terminal railway station, and on the south by the Machinery Hall. Its eastward aspect is toward the Lake, but between the Plaza and Lake Michigan lie the clear waters of the Grand Basin, central feature of the Lagoon system as the Plaza is of the landscape system. The view lakewards over the Basin passes first the McMonnies fountain, one of the most beautiful ornaments of the Exposition, and the electric fountains, with their sprays of rainbow-colored water. Then at the other extremity of the Basin stands the Golden Statue of the Republic, with the peristyle and the Lake for a background. Beveled lawns and triumphal columns and noble bridges with sculptured ornament fill the view, and it is enchanting. Here then, in the midst of all these splendors, is the golden-domed crown of the Fair.

WATER UNCONTROLLED, EASTERN ENTRANCE ADMINISTRATION BUILDING. (*Karl Bitter.*)

In size the Administration Building is a noble edifice, though it is dwarfed to some extent by the giants around it. It is 262 feet square, covers an area of more than three acres, and cost nearly half a million dollars. One of the noblest achievements of modern architecture, it is by many named

as the gem of all the buildings of the Exposition. The building is in the form of four pavilions, each 84 feet square, one at each of the four angles of the square of the plane, and all connected by a great central dome, 120 feet in diameter, and 250 feet high. The general design of the structure is in the style of the French renaissance, carried out in the academic manner of the Ecole des Beaux Arts. The first great story is in the Doric order, and of heroic proportions, surmounted by a lofty balustrade. At the angles of each pavilion the piers are crowned with sculpture. Externally the design may be divided as to its height in three principal stages. The first measures 65 feet, to correspond with the buildings around it. The second stage of the same height is a continuation of the central rotunda, 175 feet square, surrounded on all sides by an open colonnade, 20 feet wide and 40 feet high, with columns four feet in diameter. The third stage consists of the base of the great dome, 30 feet high, and the dome itself, rising in graceful lines, richly ornamented with moulded ribs and sculptured panels. This dome is coated with aluminum bronze, at a cost of

BLACKSMITH, ADMINISTRATION BUILDING. (*Karl Bitter.*)

$54,000, and shines out upon the sight from the long vistas that

TRUTH, ADMINISTRATION BUILDING. (*Karl Bitter.*)

extend in every direction from the Grand Plaza. The four great

entrances, one on each side of the building, are 50 feet wide and 50 feet high, and deeply recessed. On each side the entrances are embellished with groups of statuary, sculptured in emblematical forms. Once within the building and under the great dome, it is seen that the corner pavilions, small though they may appear from without, are in reality each four-story office buildings as to capacity and form, each of the most modern kind. Elevators lead from them to the offices above. The rotunda itself is

PATRIOTISM, ADMINISTRATION BUILDING.
(*Karl Bitter.*)

TRADITION.

open to the top of the dome. The interior of the dome is octagonal in shape, the first story being composed of eight enormous arched openings. Above the arches is a frieze, 27 feet in width, the panels filled with tablets, borne by figures carved in relief. The interior of the dome rises 200 feet from the floor, and at the top an opening 50 feet square admits a flood of light. The under side of the dome is enriched with

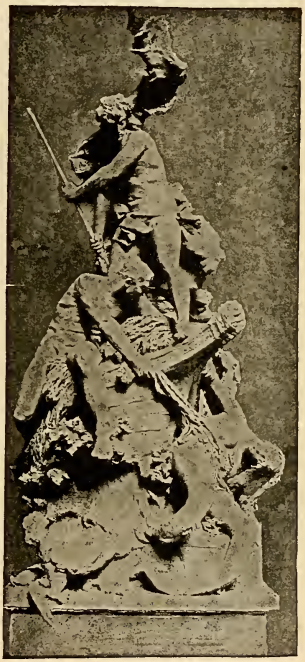
panels filled with sculpture and immense paintings, representing the arts and sciences. A mosaic floor is under foot, and settees, scattered around for the resting-place of any one who may desire, help to make the place one of the favorite resorts of the Fair.

SCIENCE, ADMINISTRATION BUILDING. (*Kart Bitter.*)

The great arched doors are always open, and a constant stream of humanity flows from pavilion to pavilion, and from arch to arch under the rotunda.

No other building on the grounds displays such a wealth of elaborate decoration. The edifice was constructed largely for show and architectural beauty, and the sculptural beauties of it are a constant delight. The groups were designed and executed by Karl Bitter, the able sculptor of New York. The decorations consist of twenty-eight groups of statuary and a number of single figures and relievos. Bas-reliefs of large size are especially used for adorning the interior of the dome. The most remarkable are

those groups which are placed at the side of the entrances. They are each thirty-four feet high, and represent the four elements, "Earth," "Water," "Air" and "Fire." At the one side of the entrance is seen the element in its natural unsubdued condition, and at the other it is represented as in the service of man and subdued by him. The first group representing Earth appears crowned with the figure of an old but powerful man, who, resting his fist on his sturdy knee, is peering forward. It is to allegorize the bulk of a mountain, the imposing form of a rock. Beneath this figure is standing a fierce fellow, who, leaning on a chopped mammoth-tooth, looks at his wife, who is wrestling with an ape for fruit. This is to represent the earth in its original relations to man, when he had to live like and contend with the animals. At the other side the stately figure of a woman is proudly lifting in the air a crown, and precious stones, while the other hand drapes her garments in rich folds. She shows that man forced from the earth all that was exquisite and valuable to him. Beneath her is a strong man breaking a rock to get at the raw materials which, completely manufactured, she is holding in her hand. At her right side is a youth, who, with a smile, carries upon his shoulder a basketful of fruit and grain.



WATER CONTROLLED. (*Karl Bitter.*)

"Fire Uncontrolled" is shown by a female figure pushing forward, holding outstretched in her right hand a snake. She is resting on the form of a man, who, with full, sensuous face, represents the storm, and who seems to force the woman in the direction where the arm is pointing. Beneath there is crouched the figure

of a woman, with a malicious expression, secretly trying to set fire to a pile of wood. "Fire Controlled" is shown by a figure of "Genius" lifting a torch as a symbol of light, the best gift that fire has rendered to man. A smith who has stricken to the feet of Genius with his hammer a demon is intended to represent the uses of fire in the mechanical arts.

DILIGENCE. (*Karl Bitter.*)

In "Water Uncontrolled" Neptune stands as the centre figure, and rules with outstretched hands the agitated waters. Beneath him a daughter of Nereus boldly plays with a Triton. She emerges from the depth to the crest of the wave, her hair tangling in the foam, and grasping the locks of the Triton, pulls him over. His anguish shows that he is compelled to submit. As a counterpart, showing the element in its subdued state, is seen a vigorous youth in a boat, carried on the breast of the water, which is now forced to lend its strength to carry man, with an oar in hand pushing his way onward. Another draws to the surface the daughter of Nereus, and tears from her hands the pearls which she has so long guarded at the bottom of the sea.

Two maiden figures in dancing motion between the clouds represent "Air Uncontrolled." One of them is turning her body as if

to show the twirling of the wind. Overhead are two Cupid-like figures of children also at play. As a counterpart, a man is holding in his hands the model of an air ship, while the expression of his features shows triumph for success. The genius which rises behind him seems to be lifting the ship. Beneath the inventor is a youth, the assistant of the aeronaut, who is also delighted with the success.

RELIGIOUS SENTIMENT. (*Karl Bitter.*)

The four wings of the building are decorated with three groups each, allegorizing the capacities, inclinations and dispositions which nature renders to man. Strength, patriotism, religious sentiment, diligence, charitableness, love of liberty, satisfaction by pleasure, respect for traditions, etc., are thus symbolized. Special regard is paid to the principles and character of the American nation. In the highest points, at the sides of the four smaller domes, which surround the main dome, there are finally placed eight more groups, allegorizing the extreme culminating points of human culture, as

art and science, industry and commerce, war and peace, theology and justice. A number of female figures representing Victory are placed upon the columns at the entrance to the dome, and bas-reliefs of Columbia are on every hand. Just within the east entrance to the building, upon the ground, is a great statue of Columbus. It is modelled by Miss Mary T. Lawrence, and is a simple, but natural and vigorous, work.

FISHERMAID. (*Karl Bitter.*)

The mural decorations within the dome are magnificent. In panels between the grand arches are sixteen huge bronze plates, on which are inscribed the names of the great countries of the earth. Yet above eight huge panels bear each a slate, supported by two winged figures. On these are inscribed records of great events and discoveries in the history of the world. Still above these are inscribed the names of the great men of the world in discovery and invention. Upon the ceiling of the outer dome is painted Dodge's great picture, "The Glorification of the Arts and Sciences." A volume could be written concerning the elaborate decoration of the great structure, but space forbids, and demands attention for the men to whom the credit of management is due.

The scheme of management has already been outlined in brief

in the chapter on preliminary history. This important feature of administration is vested in three organizations, or four, if that co-ordinate one, the World's Congress Auxiliary, be included. These are as follows: The National Commission, authorized by Congress; the World's Columbian Exposition, organized under the laws of the State of Illinois, and the Board of Lady Managers, authorized by Congress. The officers of the Commission through the period of the Fair are: President, Thomas W. Palmer; Vice-Presidents, Thos. W. Waller, M. H. de Young, D. D. Penn, Gorton W. Allen and A. B. Andrews; Secretary, John C. Dickinson. The World's Columbian Exposition directory is composed of thirty-five citizens of Chicago, elected annually by the stockholders. On this body fell the burden of raising the necessary money, and the active management of the business of the Fair, except intercourse with exhibitors. Its officers are: President, Harlow N. Higinbotham; Vice-President, Ferd. W. Peck; Second Vice-President, R. A. Waller; Secretary, H. O. Edmonds; Treasurer, A. F. Seeberger; Auditor, W. K. Ackerman, and Solicitor, W. K. Carlisle. The officers of the Board of Lady Managers are: Mrs. Bertha H. Palmer, President; Mrs. Ralph Trautman, First Vice-President,

PRESIDENT H. N. HIGINBOTHAM.

CHIEFS OF THE DEPARTMENTS.

1. Eber W. Cottrell—Live Stock.
2. Willard A. Smith—Transportation.
3. E. E. Joycox—Traffic Manager.
4. Walter Fearn—Foreign Affairs.
5. James Allison—Manufactures.
6. Moses P. Handy—Publicity and Promotion.
7. Halsey C. Ives—Fine Arts.
8. John P. Barrett—Electricity.
9. William I. Buchanan—Agriculture.
10. Frederick W. Putnam—Ethnology.
11. John W. Collins—Fisheries.
12. Frederick J. V. Skiff—Mining.
13. Lewis W. Robinson—Machinery.
14. Joseph Hirst—Secretary of Installation.
15. Selim H. Peabody—Liberal Arts.
16. John M. Samuels—Horticulture.

and Mrs. Susan Gale Cooke, Secretary. The offices of all these organizations are in the Administration Building.

Each great exhibits department has its own offices in the building which contains its displays. Another hive of industry properly to be named in this chapter is the Service Building, a plain but commodious structure, which contains the offices of the Construction Department, the Fire and Police System, the latter of which is that semi-military organization, the Columbian Guards, besides barracks, stables and other necessary conveniences. The fire and police services are excellently organized, and are under the best of discipline.

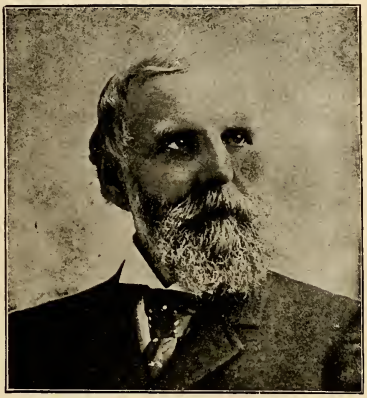
COLUMBIAN GUARD.

Throughout the Fair and the period of construction D. H. Burnham has been the Director of Works, with entire authority over the work of construction and preparation. The chief executive of the Fair has been Col. George R. Davis, the Director-General, through whose office has been had all assignment of space and other intercourse with exhibitors. A body of four, containing two representatives from each of the two great governing forces, the Commission and the Directory, under the name of the Council of Administration, has been in active charge of the entire enterprise, with authority to settle disputed points. Each department chief is an officer of the staff of the Director-General, and this consequently includes the Department of Publicity and Promotion, that great advertising enterprise under the chieftainship of Major Moses P. Handy, which made the Exposition a familiar thing in every hamlet of the civilized world. It would be interesting to follow his processes of action, but that is impossible here. In addition to the offices named, there are in the Administration Buildings rooms for the Customs House officers of the United States, a bank, telegraph and express offices, and accommodations

DIRECTORS OF THE ILLINOIS CORPORATION.

1. Charles H. Wacker. 2. William D. Kerfoot. 3. Charles H. Schwab. 4. Elbridge G. Keith. 5. John J. P. Odell.
6. Alexander H. Revell. 7. Wm. J. Chalmers. 8. Frederick S. Winston. 9. Eugene S. Pike. 10. Adolp Nathan.
11. Charles Henrotin. 12. George Schneider. 13. Edward B. Butler. 14. Robert A. Waller. 15. Milton W. Kirk.
16. Charles L. Hutchinson. 17. Thos. B. Bryan. 18. Wm. T. Baker. 19. Lyman J. Gage. 20. Chas. T. Yerkes.
21. Robt. C. Clowry. 22. Arthur Dixon. 23. Ferdinand W. Peck. 24. Charles H. Chappell. 25. Paul O. Stinsland.
26. Washington Porter. 27. Ed. F. Lawrence. 28. Benj. Butterworth. 29. A. M. Rothschild. 30. Edw. P. Ripley.
31. G. H. Wheeler. 32. John C. Willing. 33. Andrew McNally. 34. George P. Englehard. 35. Edwin Walker.

WILLIAM T. BAKER.



LYMAN N. GAGE.

The President and Ex-Presidents of the Illinois Corporation.

for working newspaper men from all over the world. It is a busy place, and the centre of Exposition life, as it is of Exposition architecture.

Manufactures and Liberal Arts
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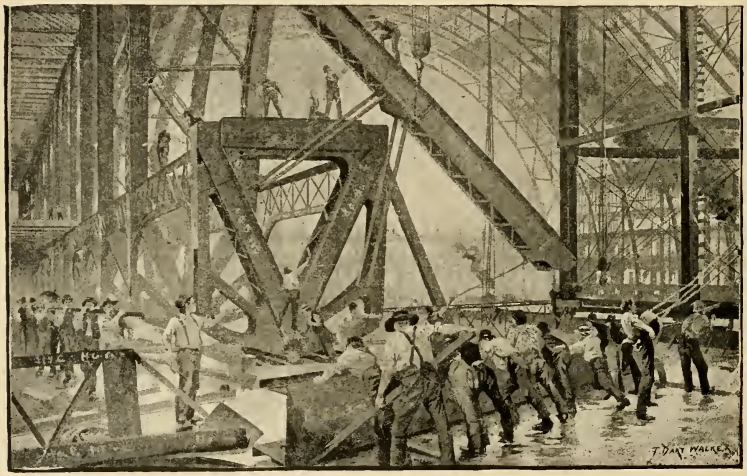
EVERY great International Exposition, from the first to this greatest of all, has had some one feature, the most notable of its attractions, which was unique and wonderful, which was the principal point of attack every sight-seer reached in his campaign of investigation. Every Exposition of the past is to-day remembered more for some such culminating attraction than for its harmony and its perfection as an educational influence. At the Paris Exposition of 1889 that *piece de resistance* was the Eiffel tower. It was such a prominent feature of the whole Fair that it is doubtful if one ever thinks of the Fair without thinking at the same time of the tower. The corresponding attraction at the World's Columbian Exposition is as enormous and as wonderful, but not so exclusive in its merit as that great tower that reached a thousand feet into the clouds of heaven. It is the Building for Manufactures, or the Main Building, as it is popularly called. This building, from its very size, is one of the wonders of the world. It is a standing violation of the rule that statistics are never interesting. Its name is Leviathan. It is the largest house that was ever built. It measures within a few feet of seventeen hundred feet long and eight hundred feet wide. To walk around it is to journey a mile. To walk once along each side of each main aisle and cross aisle, upon the floor and in the galleries,

within the structure, is to travel more than fifty miles. At the rate of one mile an hour, which is as fast as it will be possible to move through the throng, taking even the most cursory glance at the exhibits, it then requires more than a week, working constantly eight hours a day, to exhaust this building. This estimate makes no provision for careful study of the exhibits. It is an indication of the magnitude of the whole Exposition.

Now for some figures on the construction of this edifice: Its area



ERECTION OF MANUFACTURES BUILDING.

is thirty and one-half acres; while with its galleries it provides more than forty-four acres of floor space. The total cost of the building was $1,700,000. The great roof is the feature of the structure, which makes the strongest impression upon every beholder. The roof and the trusses that support it are the largest ever built. The span is three hundred and eighty feet, and the height to the ridge of the roof from the floor is two hundred and two feet. These numbers and the statement that the building covers more than thirty acres give but an indefinite idea of its capacity. It is estimated that five thousand people could live without crowding within

the walls of this monster in one thousand cottages, each 25 x 50 feet, which could be built upon the floor. The floor alone consumed more than 3,000,000 feet of lumber and five carloads of nails. There are eleven acres of skylights and forty carloads of glass in the roof.

Now, let us have some comparisons: The building is three times larger than the Cathedral of St. Peter's at Rome, and any church in Chicago could be placed in the vestibule of St. Peter's. It is four times larger than the old Roman Colosseum, which seated eighty thousand persons. The central hall, which is a single room without a supporting pillar under its roof, contains eleven acres, and seventy-five thousand persons can sit in this room, giving each one six square feet of space. By the same arrangement the entire building will seat three hundred thousand people. The Auditorium, which is the most notable building in Chicago, is so small that twenty of its duplicates could be placed on this floor.

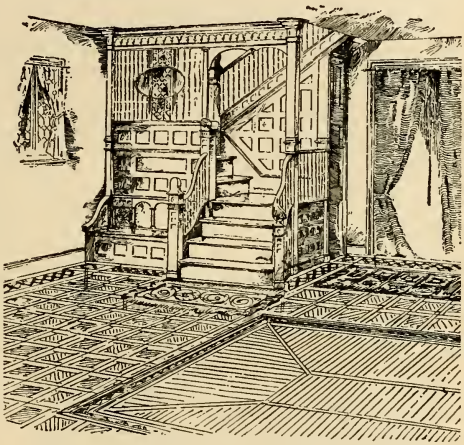


EXHIBIT OF THE INTERIOR HARDWOOD CO.

The Manufactures Building is notable not only for its immense size, but for its symmetry as well. It is in the Corinthian style of architecture, and its details are severely classic. Its façades present an array of columns and arches strictly Corinthian, but relieved from monotony by elaborate ornamentation. To a great extent this ornamentation takes for its subject female figures, symbolical of the various arts and sciences. There are four great entrances, being one in the centre of each façade. These are de-

signed in the manner of triumphal arches, the central archway of each being forty feet wide and eighty feet high. Above these portals is the great attic story, ornamented with sculptured eagles, great panels with inscriptions and sculptured figures in bas-relief. Great arched entrance pavilions are erected also at each corner of the main building, and these are designed in harmony with the central portals. Some of the greatest artists in the country have given their services to the decoration of these portals, and the magnificent paintings over one's head as he enters are a source of delight. Within the building thirty great staircases from the main floor lead to the galleries. A gallery fifty feet wide extends around all four sides, and projecting from it are eighty-six smaller galleries twelve feet wide. These galleries form a splendid post of vantage from which to survey the swaying throng beneath and the wilderness of attractive exhibits. To those who enjoy the study of human nature and the characteristics of a crowd, and desire a rest from the constant strain of seeing manufactured wonders, these galleries are a delightful place of observation, and over their railings one may view material enough for a philosopher's meditations for a century.

EXHIBIT OF PENINSULAR STOVE CO.

This great building occupies a position as delightful as it deserves. Longitudinally it faces Lake Michigan, with nothing except promenades and green sward separating these two embodiments of greatness. Here at the east front of the great house is a favorite resort during the hot afternoons of summer. The enormous roof, a third of a mile in length, casts a shadow even to the water's edge,

and the breeze blowing from off the surface of the huge body of fresh water gives rest to the weary and relief to those whom heat has burdened. Toward the south is the Grand Canal, and across its waters one sees the Building for Agriculture and its crowning object of art, the St. Gaudens statue of Diana. Westward across the Canal is the Building for Electricity. To the north is the United States Government Building and the Government Plaza. From whichever of these directions the building is approached, the great roof is that which first impresses itself upon the beholder. It is interesting now to remember that the building as originally designed was intended to have an open court in the centre instead of this arched roof; but more space was needed for exhibits, and it was decided to construct a covering for the court and so utilize it. Mr. George B. Post, of New York, the architect, swept a bit of charcoal over the plan of the building, marking a curve that bridged the central space; that stroke of the charcoal added a cost of $450,000, but it ennobled the structure as none before ever was.

EXHIBIT OF P. H. HAKE MFG. CO.

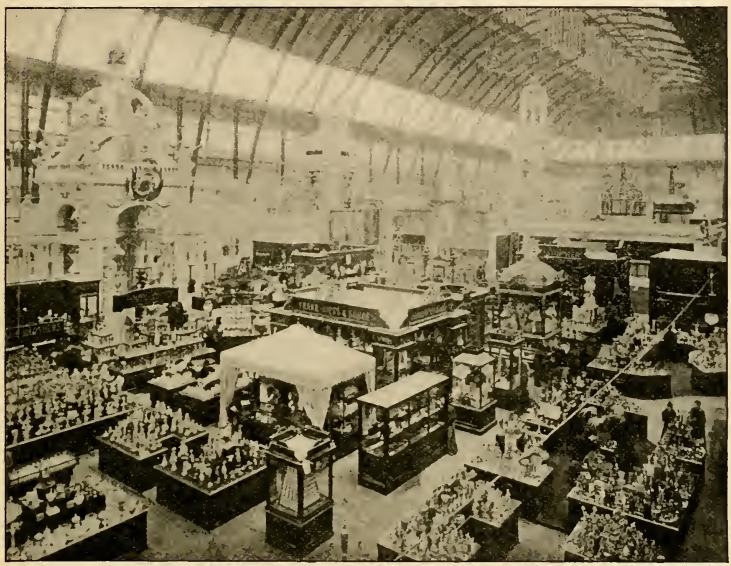
As one approaches the Park in which the Exposition was reared, the first impression justifies that happy characterization which has named the exhibit palaces "The White City." The Manufactures Building, like its companions, employs for covering a material called "staff," which gives this effect of marble whiteness. On all the buildings more than two thousand carloads of this material

were consumed. In the consideration of this structure, where its use was greatest, it is well to know something of the material. It is composed chiefly of powdered gypsum, which is mixed with alumina, glycerine and dextrine. These are mingled in water without heat, and cast in molds in any desired shape, where they harden. The natural color of the composition is a murky white, but any color may be produced by the application of ordinary paints. Brittleness is prevented by casting the material around a coarse cloth bagging, or oakum. The casts are shallow, and may be in any form in imitation of cut stone, moldings, or the most delicate designs. The material is impervious to water, and is permanent when used in buildings, although its cost is less than one-tenth of granite or marble. "Staff" was invented in France about 1876, and its first use, where it acquired prominence, was in the buildings of the Paris Exposition of 1878.

It is very proper that the design of the building should be massive and beautiful, yet severely simple. If such a one had been treated ornamentally as the smaller buildings were it would have detracted from its immense size. The motive of its architectural inspiration was to impress upon the mind of the beholder its solidity and grandeur, and not to subordinate these to considerations of mere beauty. Were the sight broken and the senses distracted by carved balconies, porches and arabesques, the building would be seen in parts and not as one gigantic whole, and its immensity would thus be lost to the spectator. As it is, the eye takes in at a glance its chaste, plain exterior, and the mind is thrilled with the idea of its stupendous size, solidity and strength.

Yet it is not to be understood that the structure is free from ornamentation. On the contrary, the interior of its domes bear upon their surfaces some of the most notable of the mural decorations of the Fair. These paintings are as follows: In the dome of the north entrance, by Beckwith, four females, symbolical of "Electricity as Applied to Commerce;" by Shirlaw, four figures on nuggets of gold and silver, a branch of coral and a huge pearl, representing "The Abundance of Land and Sea." Over the east entrance, by Simmons, four nude men, a blacksmith for iron, a

sculptor for stone, and others; by Kenyon Cox, a woman bending a sword, representing "The Metal-worker's Art;" a woman holding a distaff and weaving, a woman decorating a vase, representing "Pottery;" and "Building," represented by a woman holding a car-



GENERAL VIEW OF AUSTRIAN SECTION.

penter's square with a partly finished brick wall at the back. At the south entrance, by Reid, three seated figures of women against the sky, representing "The Art of Design," and one seated man, a metal-worker; by J. Alden Weir, female figures, representing "Pottery, Sculpture, Decoration and Textile Arts." At the west entrance, by Blashfield, winged figures allegorical of the arts of the Armorer, the Brass-worker, the Iron-worker and the Stone-worker; by Reinhart, seated figures, representing the Goldsmith's and other decorative arts, with vases of plants in the arches overhead. The subjects of Mr. Gari Melcher's panels over the southwest entrance are "The Arts of War" and "The Arts of Peace." Two panels, by

Mr. F. D. Millet, are located over the entrance of the northwest corner; they represent the weaving trades, the subjects being "Penelope at the Loom" and "The Return of Ulysses." Two panels, by Mr. Lawrence C. Earle, are placed over the northeast entrance, respectively representing "The Glassblowers" and "Pottery." Mr. McEwen's panels, placed over the entrance at the southeast corner, typify "Music" and "Textiles." The subjects in all of the decorations in this building are treated in classical style and are very fine. Around the sides in a frieze appear the names

LOOKING OVER CLOTH BOOTHS TO CLOCK TOWER.

of the States with their coats-of-arms, and gigantic eagles with uplifted wings are poised on the pediments over the entrances.

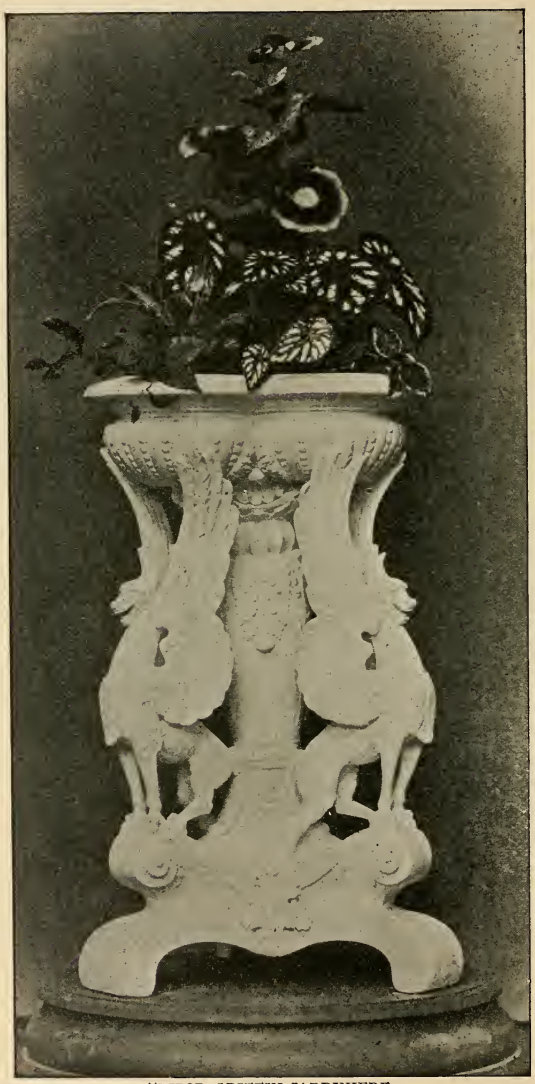
Through the centre of the building, north and south, from entrance to entrance, runs a veritable street, Columbia avenue, fifty feet wide and studded at the corners of each intersecting street or aisle with ornamental lamp-posts bearing electric lights. Across this

street at its middle runs another of the same width, thus dividing the interior of the building into four immense rectangular spaces, which are each further divided by intersecting cross aisles. In the centre of the building, at the intersection of the two main streets, stands an imposing clock-tower.

This magnificent clock-tower is 120 feet high, with a base of 20 feet diameter, which is formed of four square towers, rising to a

PART OF BRITISH SECTION.

height of 40 feet and each terminating in a dome. The archways of these lower towers culminate in a groined dome, over which is the first floor of the main tower. An ornamental balcony surrounds this story, its principal decorations being the shields of the States of the Union and the coats-of-arms of the South American States. The tower at this point narrows to a diameter of 24 feet, and upon the next floor is placed the mechanism of the great



TRIPOD GRIFFIN JARDINIERE.
Exhibit by Edwin Bennett Pottery Co.

clock, whose dials, 70 feet above the floor, mark the hours of day and night. These dials are in the fourth story and are seven feet in diameter. The fifth story is a round tower, whose arches support a dome 20 feet in diameter. In this story is placed a melodious chime of bells, furnished by the Clinton H. Meneely Company, of Troy, N. Y. Upon the main floor of the building, and under the very centre of the arches of the tower, stands an obelisk made of silver half-dollars, souvenir coins, made exactly in the model of the noted monument at Washington, D. C. This column of silver is one of the

CLOCK EXPOSITION. *Exhibited by Goldsmiths and Silversmiths Co.*

greatest attractions to visitors in the entire building. It is some 40 feet high, and thousands of coins were used in the construction of it.

Four great nations, France, Great Britain, Germany and the United States, occupy the centre of the Manufactures Building, and adjoin one another facing this great clock tower. The United States occupies the entire northeast quarter of the building, as well as a large area in the northwest quarter. Here are exhibited everything contained in the following classification, Department H, under the chieftainship of James Allison, having the widest scope of any Department. Here is a list of the groups and exhibits:

DEFENCE OF THE FLAG.
Exhibit of Monumental Bronze Co.

Chemical and pharmaceutical products, druggists' supplies: Paints, colors, dyes and varnishes: Typewriters, paper, blank-books, stationery: Furniture of interiors, upholstery and artistic decorations: Ceramics and Mosaics, monuments, mausoleums, mantels, undertakers' goods: Art metal work, enamels, etc.: Glass and glassware: Stained glass in decorations: Carvings in various materials: Gold and silver, plate, etc.: Jewelry and ornaments: Horology, watches, clocks, etc.: Silk and silk fabrics: Fabrics of jute, ramie and other vegetable and mineral fibres: Yarns, woven goods, linen and other vegetable fibres: Woven and felted goods of wool and mixtures of wool: Clothing and costumes: Fur and fur clothing: Laces, embroideries, trimmings, artificial flowers, fans, etc.: Hair work, coiffures and accessories of the toilet: Travelling equipments, valises, trunks, canes and umbrellas: Rubber goods, caoutchouc, gutta-percha, celluloid and zylonite: Toys and fancy

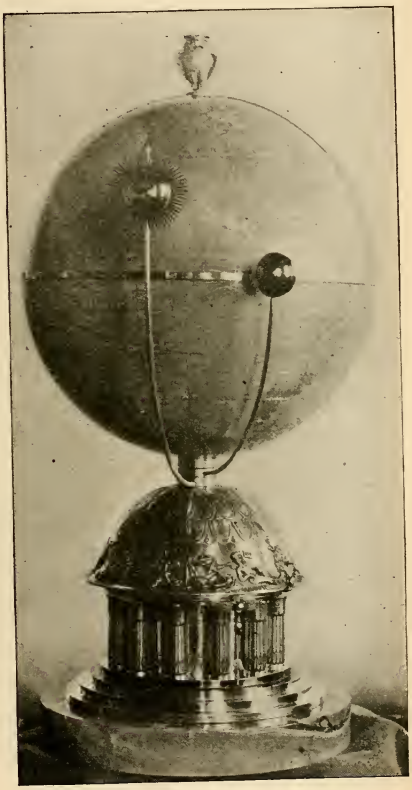
articles: Leather and manufactures of leather: Scales, weights and measures: Materials of war, apparatus for hunting, sporting arms: Lighting apparatus and appliances: Heating and cooking apparatus and appliances: Refrigerators, hollow metal ware, tinware, enameled ware: Wire goods and screens, perforated sheets, lattice work, fencing: Wrought-iron and thin metal exhibits: Vaults, safes, hardware, edged tools, cutlery: Plumbing and sanitary materials: Miscellaneous manufactures not heretofore classed.

COLUMBUS IN SOLID SILVER.
Exhibit of Gorham Manufacturing Company.

Now let us imagine that by some means the visitor has reached the exact centre of the building, under the great clock tower, to begin his sight-seeing. As he faces northward the whole northeast quarter of the building is occupied by the displays of the United States. To the northwest is Germany, to the southwest Great Britain, and to the southeast France, though, of course, none of the three latter nations extend clear to the end of the building. The displays of the United States, occupying more than twelve acres of this building alone, are more wonderful and more numerous than those of any other nation, and yet

GROUP OF SILVER CUPS AND VASES.
Exhibit of Tiffany & Co.—U. S.

this space is but one-tenth of what was originally asked for by American exhibitors. While it excels in variety, originality, ingenuity and mechanical genius all the others, yet it does not have the unity of a national display such as those of France and Germany. The most striking exhibit here is the pavilion erected by Tiffany, the jeweler, and Gorham, the silversmith, both of New York. It faces the central space, and thus has to meet for rivals the other three great nations just named. In its central front rises a tall, fluted shaft, with a plain yet noble base, and a great Doric capital, surmounted by a globe upon which is poised at an elevation of 100 feet a golden eagle. On the front of the base is the simple inscription, "Exhibit of the U. S. of America." At either side of the main entrance, in the corner, are groups of columns bearing aloft single tall shafts, terminating in globes. Arches, surmounted with carved and sculptured pediments and a roof with low, flattened dome complete this palatial edifice, which cost its builders $100,000. The display in the pavilion is valued at more than $2,000,000. It contains gold and silver ware, precious stones, rings, bracelets, chains, watches, everything rare and beautiful that the jeweler and



GLOBE CLOCK.
Exhibit of Tiffany & Co.

silversmith can show. Among the more noteworthy pieces exhibited is the Globe Clock, an interesting piece of astronomical and chronological mechanism.

The globe and casing of the works are of sterling silver; the lower part, containing the movement, represents a temple of classic form, suggested by the Roman Pantheon; the twelve pillars encircling the temple are symbolical of the months. Below them are marked the Roman numerals, upon which a hand indicates the time of day. On the roof of the temple, over the pillars, are the signs of the zodiac and names of the months. Here another hand revolves indicating the calendar month.

MAGNOLIA VASE.
Exhibit of Tiffany & Co.

The globe measures 14 inches in diameter, and the clock, complete, from the Mexican onyx base to the crown of the silver owl—the symbol of Wisdom on top—stands about 30 inches high.

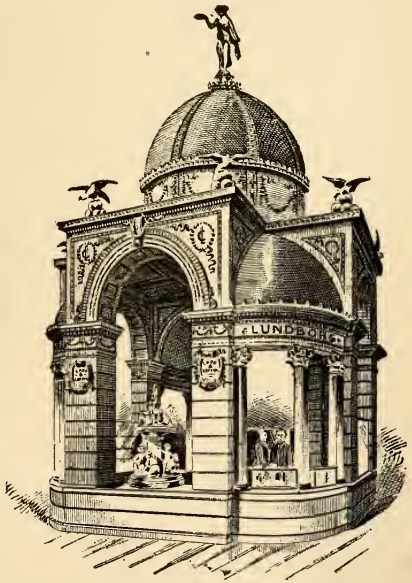
The Magnolia Vase represents the pottery of the early Americans in form, and the various sections of this country in its decorations. Its height is 31 inches, and the materials used are silver, gold and opal matrix. Nearly a thousand dollars' worth of gold was used

in the representation of the golden rod. The vase weighs about 65 pounds.

CURIOUS AND FANCY PIECES.—*Exhibit of Tiffany & Co.*

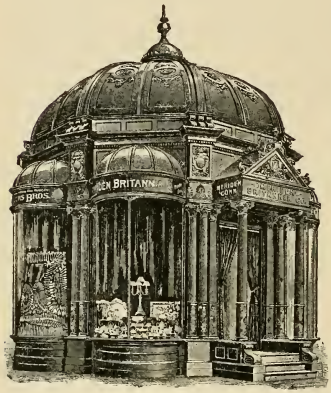
One of the special pieces that will command universal attention is an incense-burner, in the form of a rattlesnake coiled around the neck of a duck. The snake is life-size and modeled from nature, as was also the duck. The serpent's eyes are of emeralds, while its head and the rattles in the tail are formed of American pearls; 100 pearls, 450 opals and delicate enamel work add to the general effect.

Another noteworthy ornamental piece is a miniature flower-pot and saucer. Among other special fancy pieces there are toads and frogs, life-size, made as bonbonnieres, and studded with turquoise matrix, demetoids,



LUNDBORG TEMPLE.

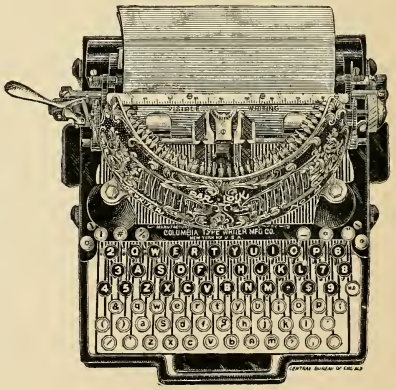
pink topaz, etc.; bugs and reptiles in great variety. The collection of American pearls is also very interesting.



PAVILION OF MERIDEN BRITANNIA CO.

Far to the north, at the end of Columbia avenue, is the space devoted to the exhibit of chemicals, perfumery, and toilet articles. One of the best of these displays is the Lundborg temple, where are shown all varieties of perfumeries manufactured by this well-known company. It covers a space of 20 x 20 feet, and has a height of 38 feet. Its material is wood, covered with ornamental plaster and painted in cream and gold. Here perfumes are dispensed free throughout the Fair, from the silver fountains in the pavilions. Some of the show-cases are in lavender, some in pink, and others in sage green. The floor furnishings are large rugs, while mahogany tables and chairs combine to make it a pleasant resort as well as an attractive exhibit.

Another, of the same character and also of excellent merit, is that of Theo. Ricksecker. The pavilion which contains it is handsome and elaborate, and the wares are also beautiful and attractive.



BAR LOCK TYPEWRITER.

Adjoining these is the display of the Rumford Chemical works. The pavilion measures 17 x 20 feet, and it is 21 feet in height. On each corner is a spire, in reproduction of

the Merchants' Exchange at Copenhagen. The pavilion is finished in ivory and gold with its counter fronts of marble. A great variety of the Rumford chemicals are exhibited.

Between these two points are ranged the wilderness of exhibits included in the classification just outlined. It is impossible to do

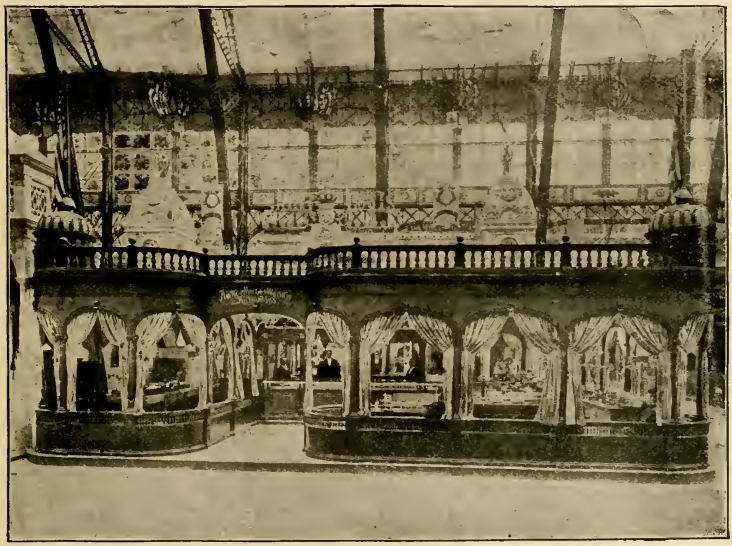


EXHIBIT OF AMERICAN WALTHAM WATCH CO.

more than name most of the more notable displays, for they are bewildering in number and beauty. The rosewood pavilion of the Meriden Britannia Company is one of the most attractive. The Heath & Milligan Manufacturing Company, of Chicago, has a mahogany booth 15 feet square, and costing more than $3,000, in which is a display of finished wood and paints, in packages. It is a place where customers are made welcome, and where every one enjoys a rest from sight-seeing. The P. H. Hake Manufacturing Company, of New York, has a beautiful display of fine stationery, all sizes and styles and tints of the fashionable papers being shown, besides visiting cards, programs, and other stationery novelties. In the

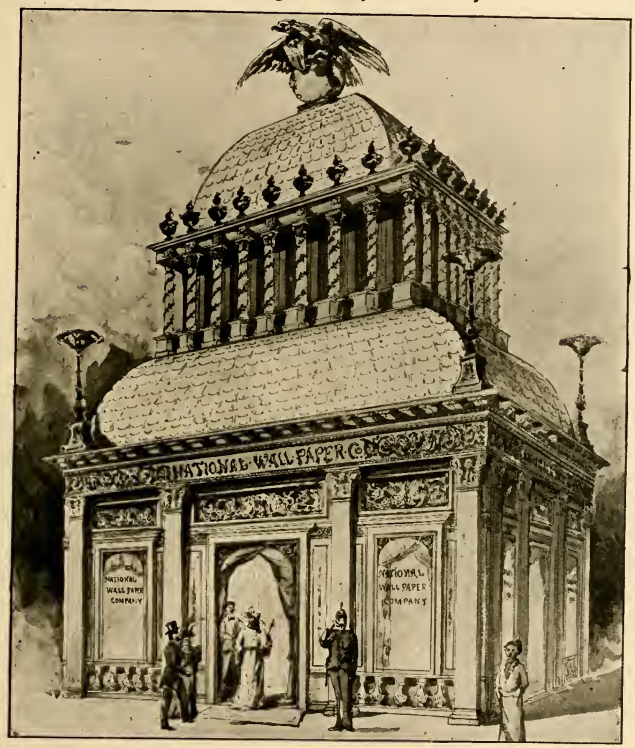
section devoted to typewriters are exhibited the Bar Lock, the Remington, the Hammond, the Smith Premier, and other leading makes. The Brunswick-Balke Billiard Company exhibits fine tables, cues, balls, counters, and other accessories. In the pavilion of the National Wall Paper Company five of their branches exhibit.

The furniture exhibits, from leading manufacturers all over the country, are unusually fine. The furniture manufacturers of Rockford, Ill., united to make a display that will surpass any other by combining their forces and each contributing a large sum of money to the cause. Their exhibit is made second to none. The space measures 42 x 22 feet. Henry Ives Cobb, one of Chicago's most famous architects, drew plans for a model two-story house of this size, in which the exhibits are made. Special designs for the furniture were also made by Mr. Cobb. The first floor of the house contains three spacious rooms—hall, parlor and dining-room. The

EXHIBIT OF CHRISTOFLE & CO.

hall is finished in oak, the style being modern Gothic, furniture and all being designed in the same manner. The parlor is in French Colonial style, trimmed in white and gold, the furniture being all mahogany. The dining-room is Romanesque, also furnished in mahogany. The walls are exquisitely decorated and frescoed, the

floors covered with fine carpets and rugs, while portieres and curtains drape windows and doors. In the dining-room the table is set for dinner. The house is lighted by electricity, and the furniture



PAVILION OF NATIONAL WALL PAPER CO.

in keeping with the elegance of the rooms represents an outlay of more than $25,000. It has the appearance of a perfectly furnished residence in every detail, which has been temporarily vacated by the owners in order to visit the World's Fair. To the extreme left, in front of the building, is a great mirror, upon which is inscribed in letters of silver the names of all the Rockford furniture companies. This is the only place on the lower floor where the name of

an individual concern appears. None of the different pieces of furniture are marked, the idea being to bury personal identity and advertise Rockford as a whole.

The second floor is reached by a handsome stairway, leading from the hall. This entire floor is used as a store-room, the different companies each having here pieces of furniture on exhibit with their cards attached. The following are the names of the companies which participate in furnishing the house: The Forest City Furniture Company; Central Furniture Company; Royal Mantel

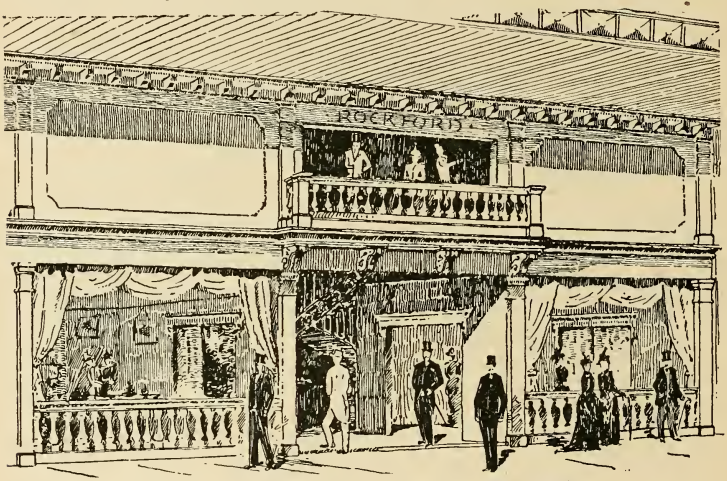
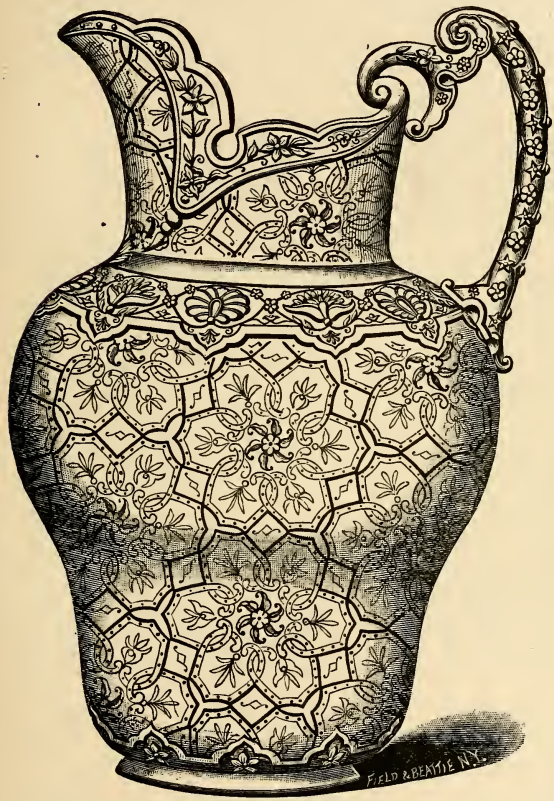


EXHIBIT OF ROCKFORD FURNITURE MANUFACTURERS.

Company; Union Furniture Company; Skandia Furniture Company; Illinois Chair Company; Standard Furniture Company; Mantel and Furniture Company; Chair and Furniture Company; West End Furniture Company; Mechanics' Furniture Company; Co-operative Furniture Company; Desk and Furniture Company; Anderson Piano Company, and Rockford Cabinet Company.

In the furniture section, the Interior Hardwood Company of Indianapolis exhibits a hall in which the floor and stairway are finished in parquetry of various design. They also display wood carpets of all kinds, and other interior finishing of handsome character,

The Bridgeport Wood Finishing Company, of New Milford, Connecticut, includes various specimens of foreign and domestic woods in the exhibit. They are placed in the shape of panels set artistically side by side in an oak frame, showing the effect produced by the various finishings manufactured by this company, when applied to different woods. The Gendoon Iron Wheel Company, of Toledo, Ohio, shows a fine display of reed furniture and bamboo novelties.



PERSIAN EWER. *Exhibited by Edwin Bennett Pottery Co.*

The exhibit of Ceramics in the Manufactures Building is separated, and while France has the finest display, yet that of America is highly creditable. The section includes not only fine China, plain and decorated, but also the coarser manufactures of clay, such as brick and other things of the same character. The Hydraulic Press Brick Companies of the United States unite in making a dis-

play of hydraulic brick of many colors and fancy designs. They have erected a magnificent arch displaying to best advantage the beauty of their work, which during the exposition has attracted much attention. Of a different character, but included in the same vicinity, is the display of the Rookwood Pottery, which is manufactured at Cincinnati. The ware is a true faience, made of clays from deposits in the Ohio valley, while the decorators, with the exception of one Japanese, and including the founders of the works, are grad-

EXHIBIT OF C. G. GUNTHER'S SONS.

uates of the local art schools at Cincinnati. The ware is considered to be highly creditable to the factory and to America.

In the exhibit of glassware which adjoins that of ceramics the Libby Glass Co., of Toledo, Ohio, makes a fine display of cut-glass. It is this company which has the large factory on the Midway Plaisance, where the processes of manufacture are shown.

The exhibits of textile fabrics are very wide, and occupy the

EXHIBIT OF STAR AND CRESCENT MILLS CO. 119

largest space of any one division of the classification. Among the more notable exhibitors here are the John W. Slater Mills, of Providence, R. I., showing ginghams and cheviots, and the Star &

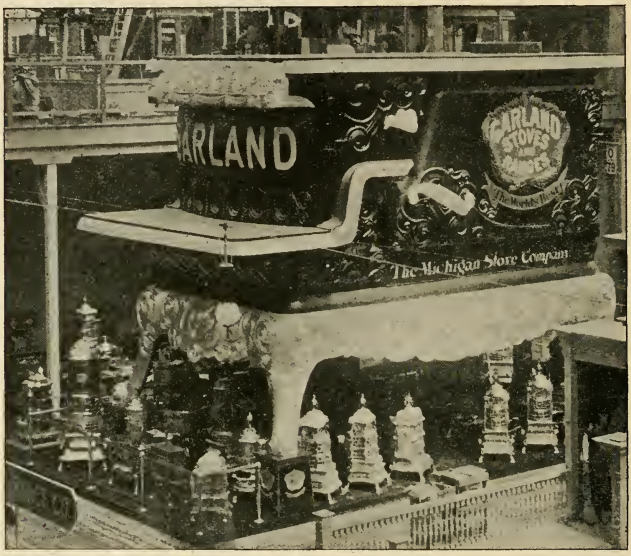


EXHIBIT OF MICHIGAN STOVE CO.

Crescent Mills Co., of Philadelphia, showing an Armenian with a hand loom, and a display of Turkish towels, tidies, cloakings, etc.

In a neighboring pavilion is the display of Knox hats. It is built of hardwood, finished with cream white enamel. The trimmings and carved work are all in gold, and the foundations, floors and pillars of marble. It contains a display of all kinds of hats manufactured by this well-known firm.

In the exhibit of furs, which is one of the finest ever seen, C. G. Gunther's Sons, of New York, display pavilions filled with all sorts of fur garments, the sable of Siberia, the seal of the northern seas, the rare blue fox, the Persian lamb and scores of others. They are manufactured in the finest manner and attract much attention.

The Pantasote Leather Co., of New York, exhibits a handsome display of this material which is coming so rapidly into prominence. For binding of books and for all kinds of upholstery it is winning much favor. The exhibit of pocket-books, bags and leather novelties made by J. C. Hacker, of New York, is contained in a handsome showcase. The goods are of the most attractive kind, and are worthy of attention.

The little ones never fail to find the display of toys and children's furniture and other novelties in the northeast gallery of the great building. Among the best of these is that of Morton E. Converse & Co., of Winchendon, Mass. Around the space allotted is a water-way, in which boats of the best style of sailing and steam

EXHIBIT OF WASHBURN & MOEN MANUFACTURING CO.

vessels voyage, being propelled by invisible machinery. There are also toy electric cars in motion, toy furniture and trunks, and mechanical toys of all sorts. In the section devoted to lighting exhibits, the American Lamp and Brass Co. has a very fine display showing their line of manufacture. All the modern fashions of heating are here shown in their perfection. Edwin Jackson &

Bro., of New York, have an exhibit of the Jackson grates which is worthy of consideration. These grates are particularly noted for their heat-saving and ventilating qualities.

ROYAL WORCESTER LAMP.
Exhibited by the Royal Worcester Porcelain Co.

The A. A. Griffing Iron Co., of Jersey City, has a representative display of radiators of every artistic and useful pattern. A large number of them are shown, as well as valves, screens, dampers, thermometers and other accessories manufactured by the same company. Twenty-three stoves and ranges and one furnace are displayed by the Peninsular Stove Co., of Detroit. The goods are all highly finished, and contain the modern improvements. One of the most interesting features is the exhibit of steel ranges for hotels and other places wherein a large amount of cooking is done. There are also novelties in heating stoves and small ranges. The representative exhibit of wire

is that of the Washburn & Moen Co., of Worcester, Mass. They show iron and steel wire, both plain and barbed, in many sizes and patterns, and in great quantity. Another display of high grade manufactured metal is that of the Claus Shear Co., of Fremont, Ohio, containing all kinds and sizes of scissors and shears.

The British section in the Manufactures building is diagonally opposite that of the United States, at the centre of the structure. The pavilion itself is not as elaborate as some of the others, but the displays contained therein are magnificent. England has never before made such a display out of her own realm as is here seen. In textile fabrics, furniture and in pottery it particularly excels.

A CORNER OF SALISBURY BANQUETING HALL.
Exhibit of Hampton & Sons.

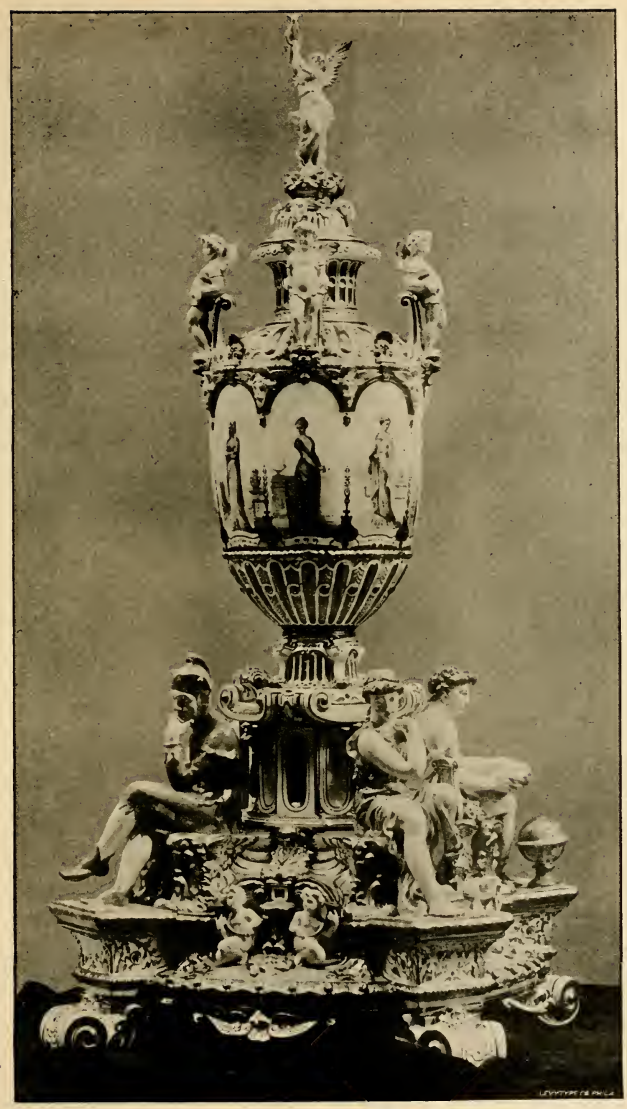
The most notable of all is that of Hampton & Sons, of London. Their exhibit is a reproduction in solid carved oak of the banqueting hall of Hatfield House, the seat of the Marquis of Salisbury. The coat of arms and all the carvings are reproduced in solid oak, and by certain processes the tone of great age is imparted. The

floor is of alternate squares of black and white marble, and the furniture and armor are of the Elizabethan era.

The pavilion of Doulton & Co., of Lambeth, exhibits their magnificent pottery-wares. It covers a space 60 by 30 feet, on Columbia avenue, and comprises two arcaded pavilions at either side of the site, connected in the centre by a domed hall. The draperies are of dark green plush, and the woodwork is painted in shades of light green. The architectural design is also very rich. The right hand pavilion is devoted to the Burslem works, and the left hand to those from the works at Lambeth. Beside exhibits showing the methods of the work, there are art wares in the nature of vases, which are of remarkable beauty. They include the Columbus vase, the Chicago vase, the Diana vase, the Dante vase, and a number of others, all in the highest style of the art. Daniels, of London, has a display which is but second to this. Messrs. Brown, Westhead, Moore & Co., of Cauldon Place, also display a fine selection of the products of their Staffordshire factories.

COLUMBUS VASE OF DOULTON & CO.'S EXHIBIT.

Facing the British section, on the east side of Columbia avenue, is the French section, generally conceded to be the best of the entire exposition. It is in its symmetry and harmony that it wins particular favor. There are rooms devoted to bronzes, others to ceramics, others to silk fabrics, and so on, with no jumbling together of dissimilar wares. Every exhibitor seems to have been willing to



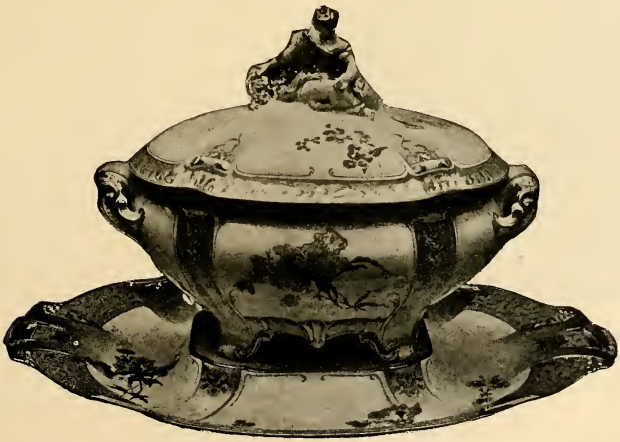
SHAKESPEARE VASE.
Exhibited by T. C. Brown, Westhead, Moore & Co.

subordinate his individual prominence to the good of the whole display, and the result is very satisfactory. A group of statuary provided by the French government fills the central place. It is a heroic statue of "La France," and wins much admiration. There are three chambers, reproductions of the salons of the time of Louis XIV. and Louis XV. These are devoted to the displays of silk, cotton, woollen and other fabrics. Perfumes, rich sets of furniture, stained glass, curious results in photography, jewelry, and other features, complete the display. One must not fail to mention the show of fancy tableware, much of it from the celebrated works of Haviland and of other manufacturers of Limoges.

CÆSAR AUGUSTUS, FROM VATICAN. GILT BRONZE.
Exhibited by Leblanc & Barbedienne.

Germany occupies the last of the four corners facing the tower. The pavilion is made from the design of Gabriel Seidel, of Munich, one of the most famous of German fresco painters and decorators. Three great circles touching one another form the ground plan.

TABLE CENTRE OF HARD PORCELAIN WITH DECORATION IN "FURNACE HEAT" COLORS. *Haviland Exhibit.*



SOUP TUREEN. *Haviland Exhibit.*

The exterior architecture is that of the sixteenth Renaissance. In

front is a German garden enclosed by an ornamental fence, passing which one reaches the main entrance. This is through a grand arch, with ornamental columns on either side, and great bronze gates of intricate and beautiful pattern. Within one finds both decorations and exhibits to be very fine. Jewelry and silverware, among the latter plate presented to the Emperors William I. and II., Von Moltke and Bismarck, and generally commemorative of some battle or other great event; royal wares from various potteries; tapestries, porcelains, etc., make a grand display. The Bismarck collection of cups, medals, vases and decorations alone represents a value of $60,000. Ancient and modern wares, a fine school exhibit, and the great statue "Germania," loaned by the Emperor, show how heartily Germany has entered into the spirit of this greatest of exhibitions.

MOZART AS A CHILD—*Sculptor, Barrias —Bronze Original Exhibited by Leblanc & Barbedienne.*

Austria's pavilion joins that of Germany, and is a fine building, measuring 120 feet long and 65 feet high. Thirty-four expert wood-carvers from Vienna exhibit their artistic work in all its branches. There is a splendid display of the work of this artistic people in all its branches, gold and silver, pottery, textile fabrics, vases, statuettes, etc., making one of the most interesting displays exhibited in the building.

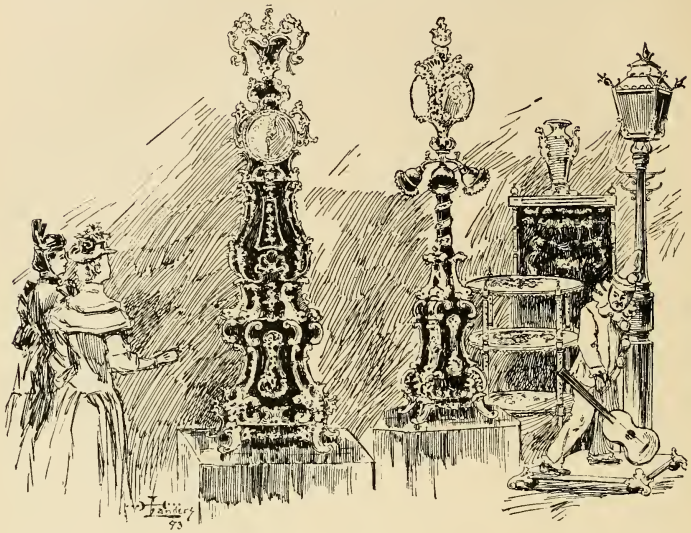
Next to the north of Austria comes Japan, the unique pavilion which represents the "Island Empire" being a constant centre of

interest. Here are seen ancient and modern pottery, porcelain and china wares, from the most delicate cups and saucers, not thicker than the shell of a pigeon's egg, to the massive serpents and dragon vases and garden seats, almost as strong as steel. A fine educational exhibit, tinctured strongly with modern progress; silks and other textile fabrics; wonderful paper building materials; decorations and utensils; lacquered wares, swords, cutlery and other implements, and many other exhibits displaying rare scientific and artistic attainments are shown here.

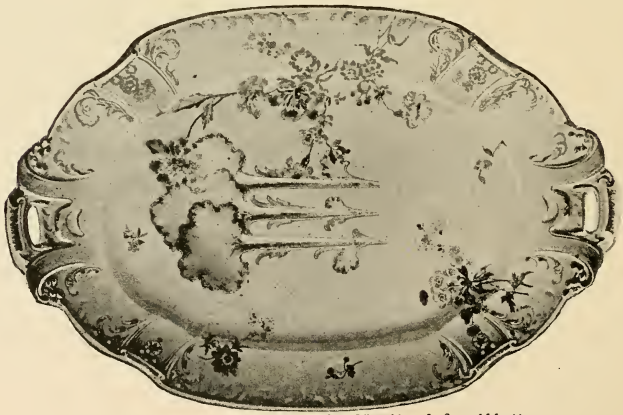
DEFENCE OF THE FLAG.
BRONZE GROUP. *Exhibited by Susse Freres.*

As one enters the building at the main entrance to the south, the first exhibit to the left is that of Italy. The immense corner pavilion is ninety feet high. Bronzes, marbles, silken fabrics, tapestries, Venetian glassware, inlaid woodwork and cabinet ware are the chief portions of this display. There is also a magnificent collection of Venetian laces, ancient and modern. The

Netherlands exhibit and then that of Switzerland follow in suc-



A CORNER OF AUSTRIAN SECTION.



GRAVY DISH. *Exhibited by Haviland & Abbott.*

cession. The wood-carving shown in the latter is superb. The

Castle of Chillon, the city of Geneva, and several Alpine views are presented. The exhibit consists chiefly of watches, watch-movements, wood-carvings, music-boxes, etc.

Across Columbia avenue, opposite Switzerland, is the display of Norway. The panels surrounding this pavilion have large canvas surfaces, upon which are painted beautiful land and waterscapes from Norwegian scenery. There is a tourist exhibit, consisting of hunting appliances and the conveyances peculiar to Norway, which excites much interest. The general displays of silverware, gilt, enameled and plain, for ornamental use; marble, granite and wood-carvings, hand-woven rugs, portieres and embroideries and educational exhibits are included in the display.

To the north of Norway is Russia, whose exhibit is one of the finest in the whole building. The pavilion is seventy feet high, and covers nearly one acre. The workmanship of it is wonderfully fine, and attracts much attention. The display consists largely of fine silks, jewelry, precious stones, etc. The furniture shown is among the best at the Fair, and has universal commendation.

Next to the Russian display is that of Belgium, another of the finest. The facade fronting on the avenue is 140 feet long, and is composed of a high central arch and two lower side arches. It joins that of France, and is somewhat in harmony with it. The structure was built in Belgium, and was brought here and erected by Belgian workmen. Among many other magnificent exhibits the collection of bronzes and plate glass of large size is noticeable. A paint manufacturer exhibits a huge female figure in porcelain, holding aloft a zinc tube of artists' colors. Samples of the iron houses the Belgians are sending to the Congo country are shown, as are exhibits of faience, finely carved furniture, etc.

Across the aisle from the exhibit of Russia is that of Denmark. This pavilion has outer portals on three sides, and from its fourth side the spaces of Switzerland and Brazil may be entered. The main façade and entrance face Columbia avenue, and represent the coat of arms of the city of Copenhagen. It consists of three towers, the central being ninety feet high, and the other sixty feet high. Over each of the two minor entrances is shown the coat of

arms of Denmark. The pavilion is decorated with beautiful landscapes from different parts of Denmark, Iceland, Greenland and its West India Colonies. There are also plaster reproductions of the famous sculptures of Thorwaldsen. The pavilion is divided into three parts, the first devoted to a display of fine gold and silverware, and jewelry, the second to a display of porcelain, ceramics and terra-cotta decorative articles, and the third to woman's work, such

JAMAICA EXHIBIT.

as embroideries, laces, etc. A treat for the children is the faithful reproduction of the room in which Hans Christian Andersen, the child's author, lived and worked. A life-size statue of the author and many relics of him are shown. The great sculptor Thorwaldsen also has a room devoted to his relics and works.

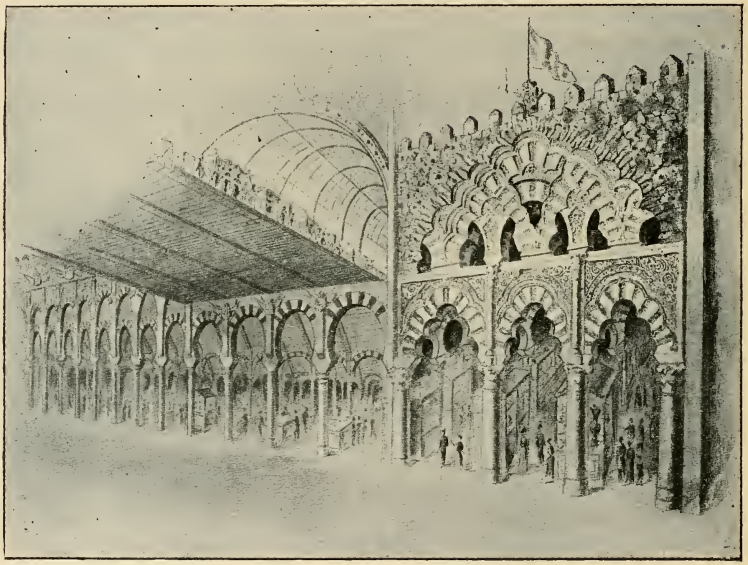
The exhibit of Canada adjoins that of England on the west side of Columbia avenue. The display is a large and creditable one, and exhibits the resources of the Dominion in a most excellent

manner. It is, however, in other buildings of the Fair that this great country makes its best showing.

EXHIBIT OF F. P. BHUMGARA & CO.

In the southwest corner of the Manufactures Building are

collected the exhibits of many countries more remote from us than these we have named, or of less importance, which have some of the most attractive and interesting displays of all at the Fair. Collected here are the pavilions of Jamaica, India, Ceylon, New South Wales, the Argentine Republic, Corea, Monaco, Turkey, Bulgaria, Portugal, Spain, Brazil, Siam, Mexico, and Persia. It is agreed by many that in proportion to its wealth and prominence in



SPANISH SECTION.

the world New South Wales makes the best display of any nation represented at the Fair. In this building there are stuffed birds and beasts, of species unknown or rare to us, fine photographs, rare coins and beautiful paintings in water and oil. Over the entrance to the pavilion, beneath the coat of arms of the colony, is the photograph of Sidney Harbor, thirty-two feet long. Four specimens of the duck-bill platypus, that strange animal, half bird, half beast, are displayed.

Ceylon has an octagonal building with two wings. The style of architecture is Dravidian, and the material used is of the rare woods of that country, many of them worth $200 to $300 a ton. Carved stairways lead to the entrances, which are guarded by cobra-headed figures. Other carvings taken from designs found in the ruined temples with which the island is so plentifully sprinkled are found on the balustrades and other portions of the wood-work. The frescos represent scenes in the life of Buddha, and are exact copies of those in the ancient temples of the tenth and thirteenth centuries. Figures of Buddha also ornament the screen panels, and the floors are of inlaid woods.

In quick succession, following the ones just named, are Jamaica, Brazil, Spain, and the Spanish-American countries, with looms and fabrics, hammocks, saddles, silverware and exquisite wood-carvings. Mexico, India, Turkey, Hungary and China also have creditable displays; the latter showing silks, porcelain, lacquer and metal work of rare beauty and value.

We have now exhausted the displays in the Department of Manufactures, but the same building contains also many of the exhibits in the Department of Liberal Arts, which will be treated in a future chapter. The Department of Manufactures, however, includes exhibits which are not contained in this building, but are given separate structures. The most notable of these is the Leather Exhibit.

The Leather Building is a very handsome one, 575 feet long, 150 feet wide and two stories in height. It is located in the southern portion of the grounds, facing the Lake front, and between the Forestry Building and the exhibit of Krupp guns. The building and the exhibits contained in it are so important as to entitle a separate chapter if space permitted. Nearly every nation, savage and civilized, is here represented by samples of its leather. To foreign exhibits the central space on the first floor is assigned. At one end of this floor is seen every variety of leather, and at the other every style of its manufactured product, no matter where or when produced. Here are the riding-boots of that great warrior, Napoleon, and the elaborate ones of Russia's dreaded ruler, Ivan

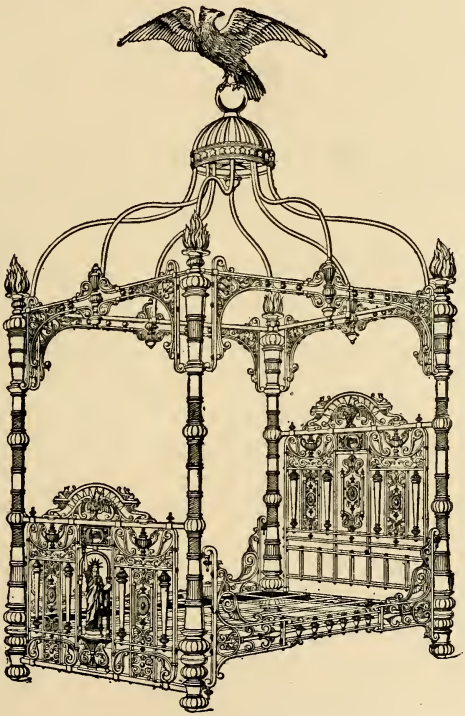
the Terrible. The second floor contains 180 machines showing the processes of manufacturing. Three hundred men are required to operate these, and they display some very interesting methods. The interior of the building is divided into squares, with passage-ways named after noted leather-producing cities.

Another exhibit properly belonging to that of the Department

MERCK BUILDING.

of the Manufactures is contained in the Merck Building. This building is situated to the west of the Woman's Building, near the entrance to the Midway Plaisance. It is a handsome structure, and contains a complete exhibit of drugs and finer chemicals, products of every clime, exhibited by Merck & Co., of New York. There are also reading and writing rooms, a reference library and other public comfort service for visitors and customers of the firm. Thus

it will be seen that the exhibits properly included in the scope of this chapter have as great a range of area and distance in the grounds as they have in character, and in their source. One might spend months profitably studying what is here shown, without then exhausting all the benefits which he might derive from the display.



EAGLE BRASS BED.
Exhibit of Hoskins & Sewell.

Machinery Hall
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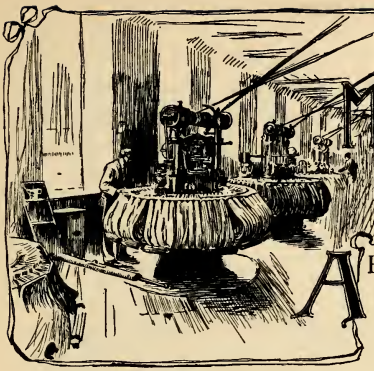
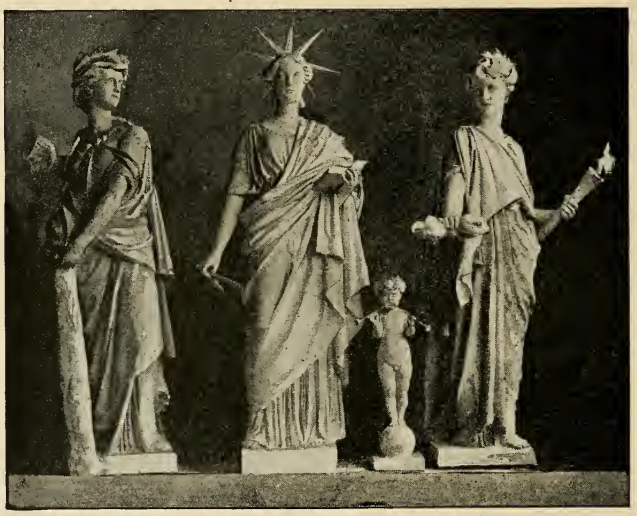


MACHINERY.

ARCHIMEDES declared that if he but had a place on which to rest the fulcrums, he could construct a lever with which he could lift the world. If that machinist of old were to enter the building for machinery at the World's Columbian Exposition he would be amazed. He would believe his dream realized, for here are combinations of the mechanical arts so perfect and so wonderful that it would seem as if by their united strength the world and the solar systems of the universe could be overturned with the touch of an electric button. Here is the most marvelous display which mechanical ingenuity and genius has ever gathered to be viewed by man. Here every nation which can offer anything in the nature of advanced machinery comes in competition with every other, and the result is bewildering. The whir of wheels and the clamor of engines is almost deafening, and yet in the midst of all the noise and confusion each machine works hour by hour as if with brains of steel

SCULPTURE ON MACHINERY HALL.

too strong to be dazed or troubled. The immense structure which houses the exhibits of machinery is second in cost to none except the building for manufactures, and second in size only to the same giant. With its annexes, power-house, pumping works and machine shop, its total area is more than eighteen acres, and the total cost nearly $1,300,000. The dimensions of the main structure are 492 x 846 feet, and of the annex 490 x 550 feet. The power-house measures 100 x 461 feet; the pumping works 77 x 84 feet, and the



WATER. SCIENCE. FIRE.

FIGURES ON MACHINERY HALL. (*M. A. Waagen.*)

machine shop 146 x 250 feet. The method of construction of the building for machinery is somewhat peculiar. The building is spanned by three arched trusses, and the interior presents the appearance of three railroad train houses placed side by side, surrounded on all sides by a 50-foot gallery. Each of these three divisions of the building, spanned by its own series of trusses, is constructed separately, with the intention that they may be taken down after the close of the Exposition and sold for use as railway

train houses. The salvage will consequently be very profitable.

GROUP ON COLONNADE.
Between Agriculture and Machinery Buildings. (*M. A. Waagen.*)

Running from end to end of each of these three long naves is an

elevated travelling crane. During the installation of exhibits these cranes were used for the purpose of carrying into place the enormous weights of machinery used during construction as well as for purposes of exhibit. When the Exposition opened platforms were placed upon the cranes, and visitors may now view from this elevated station the entire array of wonders upon the floor below. The same posts which support these travelling bridges also carry the shafting which conveys power from the power plant to the machines throughout the building. In the main structure steam power is used, and the power-house which supplies it adjoins the south side of the building. On this side and the westerly end of the structure the exterior is of the plainest description. A strong contrast to this description may be observed, however, on the east and north, the two sides adjoining the grand court. Here the exterior is ornate and palatial. It harmonizes with the other buildings on this grand Plaza, all of which were designed with a view of making an effective background for magnificent display. Conforming thus to the general richness of the court these two façades are enriched with colonnades and other architectural features. The architects of this edifice, Messrs. Peabody & Stearns, of Boston, very happily chose classical models throughout their design, borrowing the detail from the renaissance of Seville and other Spanish towns as remarkably appropriate to a Columbian celebration.

In the assignment to various architects of commissions for designing certain buildings there were few restrictions made upon them and few regulations which they were instructed to follow. One was that all the architects were to adopt a proportion of 60 feet of height, 50 being the column height and 10 that of the entablature. This was to be kept equal and even, and in perfect accord with the top of the line of solid masonry around the Grand Court. It is so to-day. Above that 60-foot level are the statues, poles, towers, rails, and the rest of the ornamentation of the palaces. Another regulation was that, in all buildings on the Grand Court, arcades on the first story should permit passage around the building under cover. In harmony with these, Machinery Hall then is.

It is well to exhaust our glance at the construction and plans of

the buildings before attempting to discuss the host of exhibits

GROUP ON COLONNADE.
Between Agriculture and Machinery Buildings. (*M. A. Waagen*).

placed in them. The Annex in which electrical power is used adjoins Machinery Hall on the west. It is a very large but

very simple building, constructed of wood in a plain and economical manner. While in the main building for machinery the type was a railway train house, in the Annex a mill or foundry was considered the model for construction. Attached to this great Annex is the power-house, convenient to the tracks for coal supply, and containing the immense display of boilers. Adjoining is the enormous plant of engines and dynamos, the largest and most interesting display of electrical power ever made. Hundreds of thousands of persons for whom an intricate machine has the strongest fascination make this building their Mecca, and every hour spent within its walls is a valuable one. Steam machinery, electrical machinery, pneumatic and hydraulic machinery—all are exploited here in the most exhaustive way. Here are shown the processes and the machines whose finished results are to be found at the other extremity of the Grand Court in the Manufactures Building. The rich fabrics, which are found in the latter structure, are made by those looms in the former. In certain instances confusion may arise in one's mind over the location of certain exhibits. Certain electrical machinery is found in the Building for Electricity. The Building for Mines and Mining contains certain machines for illustrating the processes properly belonging to that department. The Building for Agriculture contains certain farm machinery, but with these limitations the visitor will not be mistaken in seeking the enormous quantity of machinery exhibits in the building erected for that purpose. Everything illustrating the application of power is found here, and the most interesting mechanical devices are multiplied in bewildering quantity. A review of some of the more notable of these exhibits, representing each great division of power application—steam, electric, pneumatic and hydraulic power—will be of marked interest.

The decorations and statuary of this structure are also of great merit and beauty. The main entrance is in the centre of the north side of the building, and six large figures tower above it, each bearing a shield on which appear the faces of a number of prominent inventors. Above these six figures, between the two high towers, are placed five other figures thirteen feet high. In the centre is

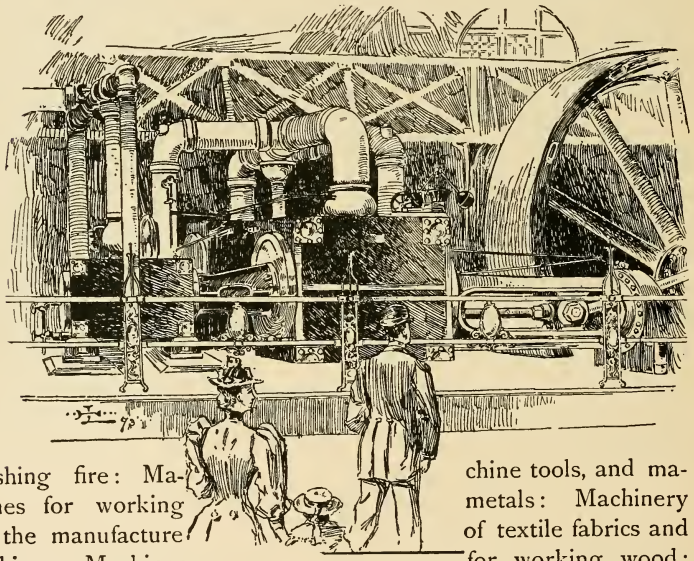
"Science," and at her sides are the four elements, "Fire," "Water," "Air," and "Earth." Surmounting each of the towers are two large figures representing "Victory" holding forth her emblematic laurel wreath. To the right and left of the entrance below the cornice are inscribed the names of a score of the great inventors. Over

MACHINERY FOR MANUFACTURING TEXTILE FABRICS.
Exhibit of Star and Crescent Mills Co.

the eastern entrance appears a pediment representing "Columbia" as the central figure, seated on a throne with a sword in her right hand and a palm of peace in her left. To her left is standing "Honor" with a laurel wreath ready for distribution. On one of the steps of the throne is seated "Wealth" throwing fruits and flowers out of a horn of plenty. To the right and left are grouped inventors of machinery, and members of an examining jury. The

corners of the pediment are filled by two groups of lions, showing brute force subdued by human genius, which is represented by two children. Most of the sculpture work on this building was done by M. A. Waagen.

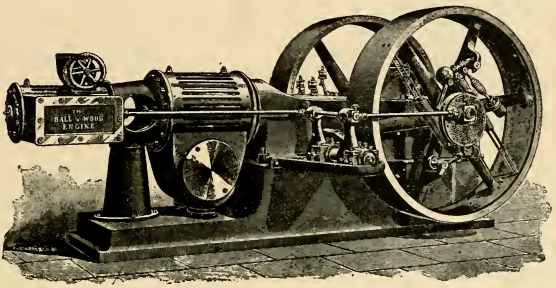
The exhibits of foreign countries in Machinery Hall are grouped in the east end of the building, and those of the United States in the west end and in the annex. The classification in Machinery Department includes the following groups: Motors and apparatus for the generation and transmission of power, hydraulic and pneumatic apparatus: Fire-engines, apparatus and appliances for extinguishing fire: Machines for working metals: Machinery for the manufacture of textile fabrics and clothing: Machines for working wood: Machines and apparatus for typesetting, printing, stamping, embossing and for making books and paper working: Lithography, zincography and color printing: Photo-mechanical and other mechanical processes of illustrating: Miscellaneous hand tools, machines and apparatus used in various arts: Machines for working stones,



THE BIG ENGINE.
Built by E. P. Allis Co.

clay and other minerals: Machinery used in the preparation of foods, etc.

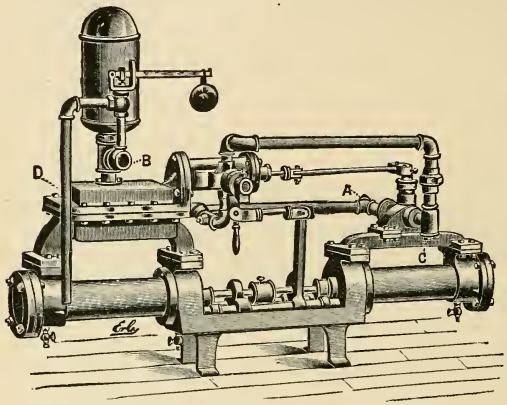
It is in the first-named group that one finds all the immense engines and boilers which create so much power. In the boiler exhibit those shown by the Stirling Company are of particular interest because of the circumstances under which they were installed. A combination of boiler-makers used every effort to keep the Stirling Company from exhibiting, and at one time they were refused admission to the space for boilers. The Council of Administration reversed the decision of the Exhibition Company and they were awarded the contract to install two batteries of boilers of 800 horse-power each, in the main boiler room. The result was that a temporary injunction was issued against the Exposition Company, forbidding them to permit the Stirling Company to install its boilers. The bill was finally dismissed by the United States District Court, and the company continued to install its exhibit. The displays, therefore, are the result of a determined effort to seek on even terms a comparison with the boilers of other make. There are three separate and distinct plants, one in the main boiler room, one in the annex and one in the exhibit of the Libby Glass Company in the Midway Plaisance. They attract notice from every one.



TANDEM COMPOUND ENGINE.
Exhibit of the Ball & Wood Co.

The power plant at the Exposition occupies the south side of Machinery Hall and includes the most gigantic force ever accumulated in one place for any purpose. The engines number forty-four, the Allis, which is the largest of all, occupying the space at the end of the main aisle. This big engine of the Fair is a 3,000

horse-power Reynolds Corliss horizontal, quadruple expansion, condensing engine. It drives two 10,000 light, Westinghouse dynamos. The same manufacturers show several other engine plants, including those that drive the cars of the Intramural Railway, a saw-mill plant and a flour-mill plant. There are six other engines of very large capacity, a Fraser and Chalmers triple expansion, two Westinghouse-Church-Kerr compound engines, a Buckeye triple expansion, an Atlas compound and a Mackintosh-Seymour double-tandem compound. The others included in the display measure from one hundred and fifty to six hundred and fifty horse-power each, while those just named are all of 1,000 horse-power each. Among these other exhibitors of engines are the Ball & Wood Co. of New York, the Erie City Iron Works of Pennsylvania and the Sioux City Engine Co. of Sioux City, Iowa. The total horse power represented is about 20,000.



AUTOMATIC PUMP OR WATER ELEVATOR.
Exhibit of Erwin-Welch Hydraulic Machine Co.

The boiler plant consists of a continuous battery of huge steel boilers of the latest type eight hundred feet long. The boilers are those of such manufacturers as Root, Gill, Heine, National, Zell and Babcock and Wilcox. They are all of the water tube pattern. Their feed water pumps represent Dean, Barr, Knowles, Gould, Blake, Davidson, Cameron, Laidlaw, Wilson & Snyder and Canton & Snow. Crude oil from the fields of Ohio is used for fuel, and there is no smoke, dust or dirt, as there would be if coal were burned. The feeding of the oil to the furnaces is controlled by automatic pressure gauges regulating the flow so that there can be

no danger, as might happen with careless firemen. The oil is pumped from Whiting, Indiana.

West of the batteries of boilers are the machine shops, blacksmith shops, etc., fully equipped for repairing and keeping in order the machinery used in the building. Having examined the motive power controlling the exhibits, the visitor will find in the centre of the building a very pretty waterfall, and at either end a fountain. Here are displayed the various pumps, water elevators, hydraulic, hydrostatic and pneumatic apparatus. The Globe Iron Works, of Cleveland, Ohio, in their display of marine machinery, show a steam

THE BOILERS IN MACHINERY HALL.

steering engine, a steam capstan windlass, and a reversible steam capstan. The Stilwell-Bierce & Smith-Vaile Co., of Dayton, Ohio, shows a series of Victor turbine wheels and also regular upright water wheels of various kinds. The application of water-power is one of the worthiest branches of machinery, utilizing one of America's most plentiful possessions.

The Jeffrey Manufacturing Co., of Columbus, Ohio, makes a fine display of chain belting, elevating, and conveying machinery. In

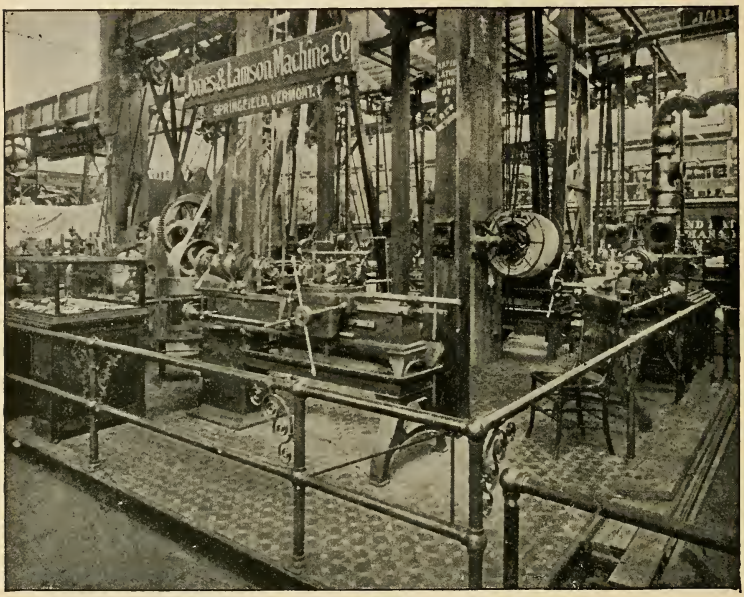
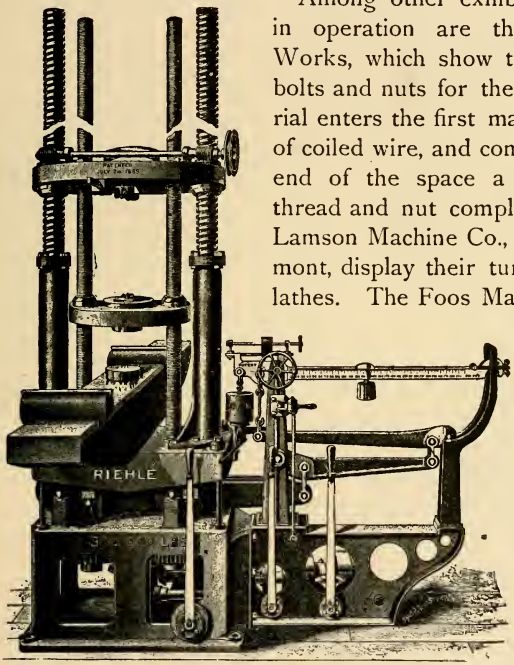


EXHIBIT OF JONES AND LAMSON MACHINE COMPANY.

this section devoted to the transmission of power, the Reeves Pulley Co., of Columbus, Indiana, shows the largest wood split pulley ever constructed. It is eighteen feet in diameter with forty-eight inch face. Although there are something over four thousand pieces of wood in this pulley, yet it admits of the closest inspection in every detail; and from the standpoint of mechanical exactness is one of the marvels of the Exposition. The same company also shows a large variety of pulleys in regular sizes and styles.

The display of travelling cranes made by Wm. Sellers & Co., of Philadelphia, shows the modern method of handling heavy machinery. Without these cranes, and those shown by other companies, it would have been impossible to install the great exhibits of the Fair within the time which was given. The same company also shows a

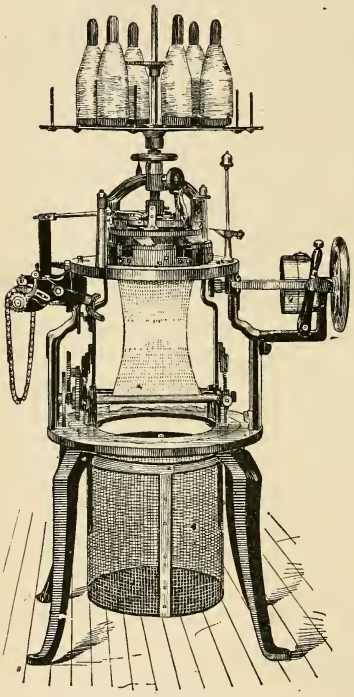
hydraulic testing machine of 200,000 pounds capacity. The Riehle Bros. Testing Machine Co., of Philadelphia, shows a screw power testing machine of 300,000 pounds capacity, the largest ever built. It will pull bars six feet in length with an elongation of three feet, will crush columns six feet in height, and bend timbers or other transverse specimens eighteen feet long. So much power is almost incredible to many visitors.



TESTING MACHINE. *Exhibited by Riehle Bros.*

Among other exhibitors of machinery in operation are the Columbus Bolt Works, which show the manufacture of bolts and nuts for the same. The material enters the first machine in the shape of coiled wire, and comes out at the other end of the space a finished bolt with thread and nut complete. The Jones & Lamson Machine Co., of Springfield, Vermont, display their turret machinery and lathes. The Foos Manufacturing Co., of Springfield, Ohio, make a display of mills and forges. Schaum & Uhlinger, of Philadelphia, have one of the largest collections of looms in the building. There are silk ribbon looms for narrow and wide ribbon, stamping machines, punching machines, lacing machines, and a plan for producing and repeating pattern cards. Lewis Jones, of Bristol, Pennsylvania, shows the Ballou knitting machinery in operation, making stockings and underwear. John Best, of Paterson, N. J., shows also a loom, weav-

ing badges, book-marks and souvenirs of various kinds. In the section devoted to wood-working machinery is an apparatus exhibited by W. W. Grier, of Hulton, Pa., for manufacturing ingrained lumber out of pine, bass or other soft wood. It produces the effect of oak, rosewood or other fancy lumber at low expense.



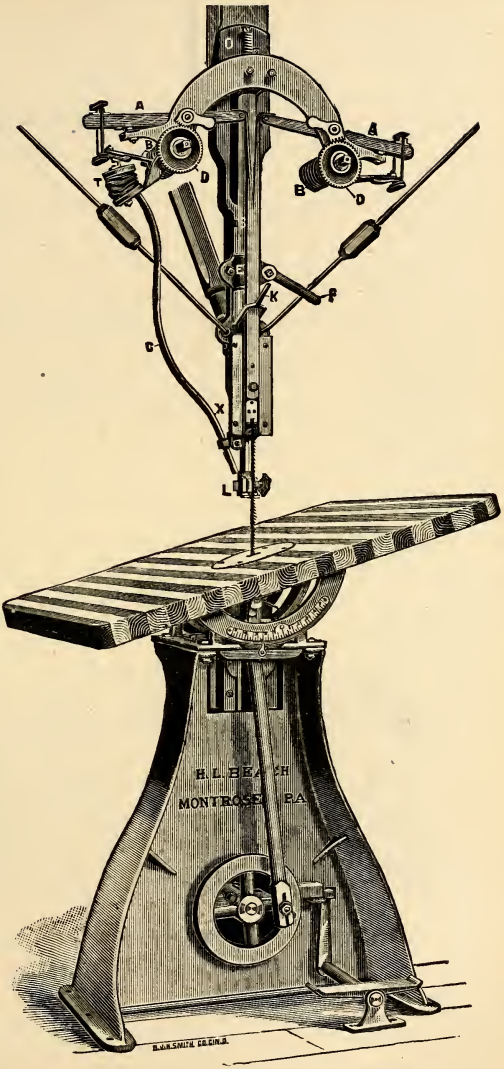
BALLOU RIBBED KNITTER.
Exhibit of Lewis Jones.

The Fox Machine Co., of Grand Rapids, Mich., shows a variety of machinery, including borers, shapers, trimmers and saws. H. L. Beach, of Montrose, Pa., displays a fine line of scroll saws. The H. B. Smith Machine Co., of Smithville, N. J., has also a large number of wood-working machines displayed.

One section which attracts great attention is that devoted to printing presses and kindred appliances. The Goss Printing Press Co., of Chicago, R. Hoe & Co., of New York, and many other printing press manufacturers show their wares here, all in operation. There are also presses devoted to the making of lithograph plates and color printing of various kinds. Several of the daily papers of Chicago are printed here, and one of the novelties of the Fair is the *Daily Columbian*, issued from this building. Its first five pages consist of the first pages of the *Herald*, *Inter-Ocean*, *Record*, *Times* and *Tribune*, and its three remaining pages are filled with daily programs, official orders, lists of officers, exhibitors, etc.

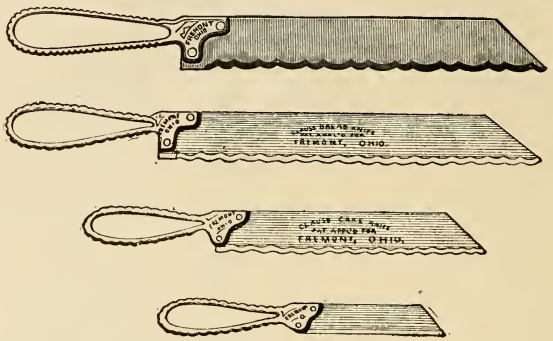
The companies which manufacture type-setting machinery all

display work in operation. Among them are the Mergenthaler Linotype Machine, which produces lines of type ready for use on the press or stereotyping table. Another is the Thorne Type-setting Machine, which, instead of casting the type from molten metal, sets the type itself as the printer does by hand. The Seybold Machine Co., of Dayton, Ohio, exhibits five machines used in book-binding and paper-cutting. They are of the most modern character, and win favor wherever shown. The Chambers Bros. Co., of Philadelphia, also show machinery in the same line, which appears to be of equal merit. The W. O. Hickok Man-



SCROLL SAW. *Exhibit of H. L. Beach.*

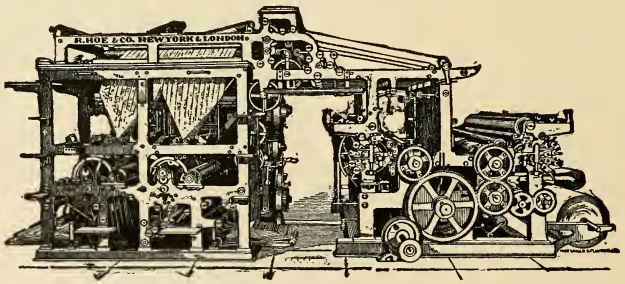
ufacturing Co., of Harrisburg, Pa., exhibits ruling machines, signature presses, stitching machines and board-cutters of latest design.



CARVER, BREAD AND CAKE KNIVES, AND PARER.
Exhibit of Clauss Shear Co.

Barnhart Bros. & Spindler, of Chicago, show all the processes of type-founding and manufacture.

Machines devoted to the preparation of food, such as flour mills, are shown in the extreme northwest corner of the annex. Adjoining it, the Dodge Manufacturing Co. shows a collection of pulleys, large and small. Ventilating machines are also included

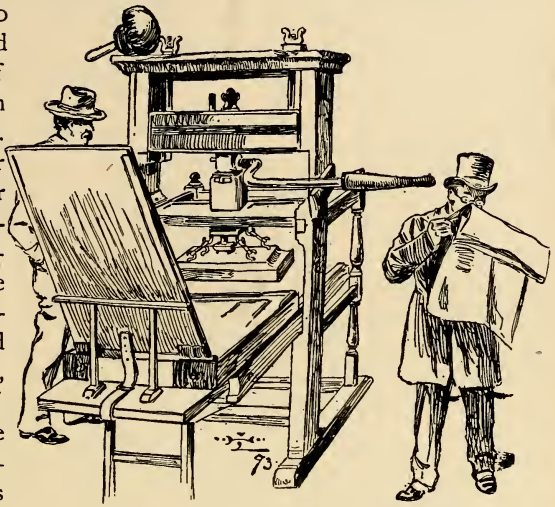


QUADRUPLE STEREOTYPE PERFECTING PRINTING MACHINE, WITH FOLDERS.
Exhibited by R. Hoe & Co., New York and London.

in this neighborhood. The Steam Stonecutter Co., of Rutland, Vt., shows machinery for working stone in the group devoted to that.

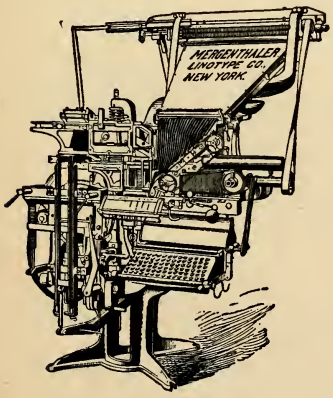
Going now to the eastern end of the building, we find Great

Britain, the first of the foreign governments, whose displays cover an area of 30,000 square feet, and adjoin those of Germany, which are even larger. In the latter space circular rope transmission, a new system of motive power, is practically illustrated for the first time, since one-half of the whole German machinery exhibit is propelled by it.



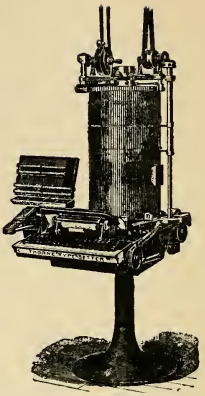
FIRST PRESS IN NEW HAMPSHIRE.—151 YEARS OLD.

A large engine made by Schichau, of Prussia, furnishes the steam, and the same firm, too, has a 1,000 horse-power engine, which moves the big Siemens dynamo. Textile machinery from Glaubach-on-the Rhine is seen in the complete assortment. From Augsburg, Bavaria, comes a display of rotary presses, and a Dusseldorf firm exhibits friction calenders with ten rollers. The huge Gruson Works, near Magdeburg, make an instructive exhibit of mining machinery and gas-power engines, while Wolf, of Magdeburg, shows locomotives, some of them constructed according to new principles.



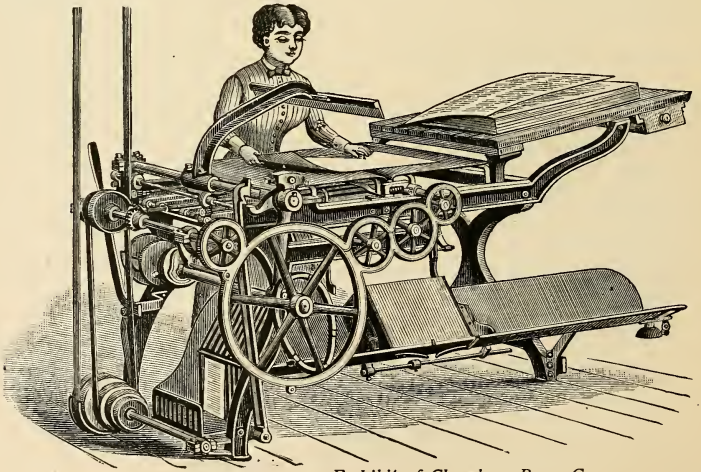
THE LINOTYPE MACHINE.
Exhibited by Mergenthaler Linotype Co., New York.

It is impossible to enumerate every article in a display so large and various; but the chief ones are gas-engines, water turbine wheels, knitting machines, circular saws for cutting iron, embroidering machines, printing presses, book-binding machines, flour-mill machinery, saw-mills, turning lathes, milling and mining machinery for ores, sausage machine, textile machinery, wire machines and a complete watch factory.



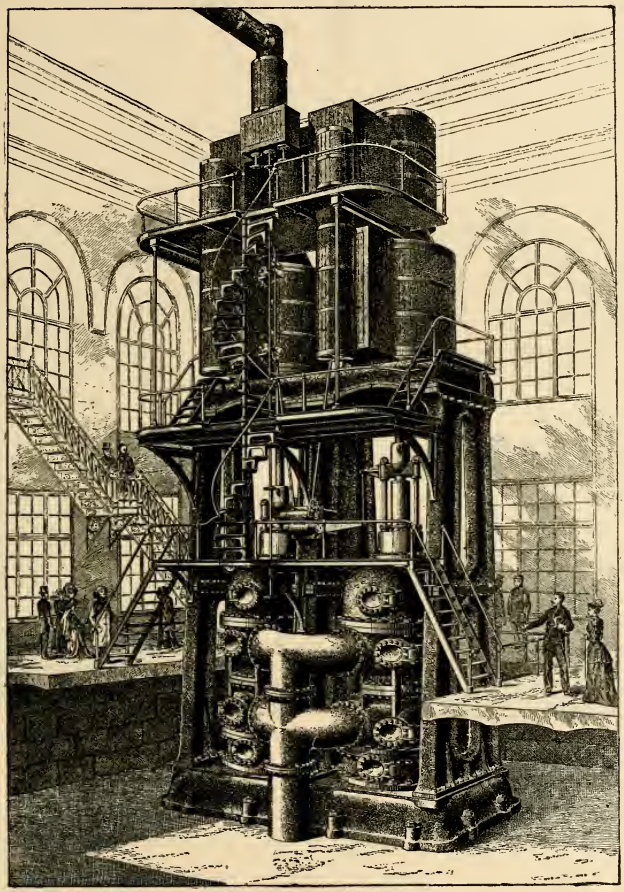
THORNE TYPE-SETTING MACHINE.

Next to Germany on the right is found the display of Spain, and adjoining that the one of New South Wales. Italy's exhibit is just west of the latter, and then those of France, Sweden, Russia, Mexico, Austria, Brazil, Belgium and Canada. Of these latter, France has the largest space and a splendid display, occupying more than 21,000 feet. Belgium comes next in size, and then Austria, Canada and Italy. The others have smaller areas and less pretentious exhibits, although all are creditable.



BOOK-FOLDING MACHINE. *Exhibit of Chambers Bros. Co.*

In certain portions of the great building one would think the

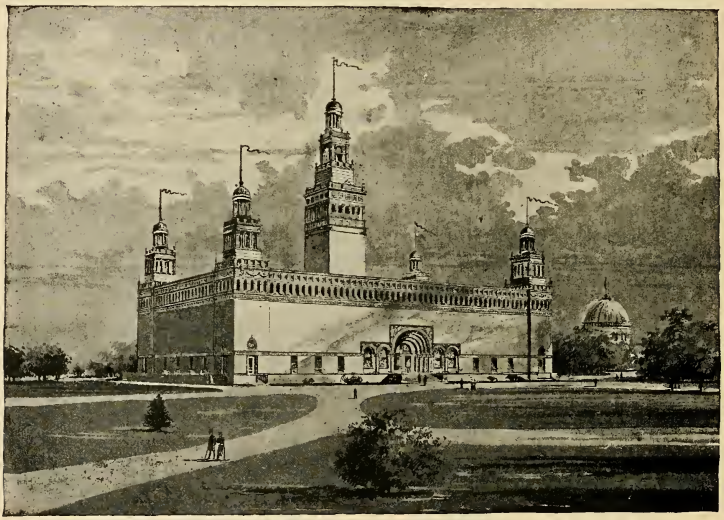


VERTICAL PUMPING ENGINE—CAPACITY 40,000,000 GALLONS DAILY.
Exhibited by Henry R. Worthington, New York.

din to be deafening, but the very magnitude of it all seems to lessen the noise, and as one wanders from engine to loom, and

loom to mill he forgets noise and sees only the wonderful processes which man's inventive genius has been able to make.

At the northwest corner of Machinery Hall, the Fair Grounds Pumping Works are located with a capacity of 40,000,000 gallons of water every twenty-four hours. The pumping engines used are from the works of Henry R. Worthington, of New York city. There are four types of engines—a triple expansion vertical, a high speed, a vertical duplex and a horizontal high-duty duplex. The



COLD-STORAGE BUILDING.

water is obtained from a well in the centre of the building, which is connected by a tunnel with the main lagoon.

On the south side of Machinery Hall, between the machine shop and boiler house, and the saw-mill, is an extensive outside exhibit of machinery, occupying a space co-extensive in length with the inside exhibit of this department. It is as interesting as that contained within the building, and is worthy of careful attention. The saw-mill also adjoins this tract.

Certain ice-making machines are contained in Machinery Hall,

but the greatest exhibit of this apparatus was that contained in the Cold-Storage Building, erected by the Hercules Iron Works, of Chicago. Early in the month of July this building burned to the ground in mid-day; and, in fighting the fire, seventeen members of the City Fire Department and others were burned to death. Ten thousand spectators viewed the conflagration and groaned with anguish at the horrible scene. The building was 130 x 255 feet in size and five stories high. At each corner was an imposing tower, one hundred feet high, while the beautiful central tower covering the smoke-stack extended 220 feet in the air. Upon a balcony of this larger tower, the firemen were imprisoned until the flames compelled them to leap to the blazing roof of the main building, a hundred feet below. The structure was of the Romanesque order of architecture, and was a beautiful building. Its ice-making appliances were of the best, and of enormous capacity. The loss was many hundreds of thousands of dollars. Chicago's practical sympathy with the sufferers who lost their lives was shown by the raising of a fund of more than $100,000, which was distributed among those dependent upon the firemen.

Agricultural Building
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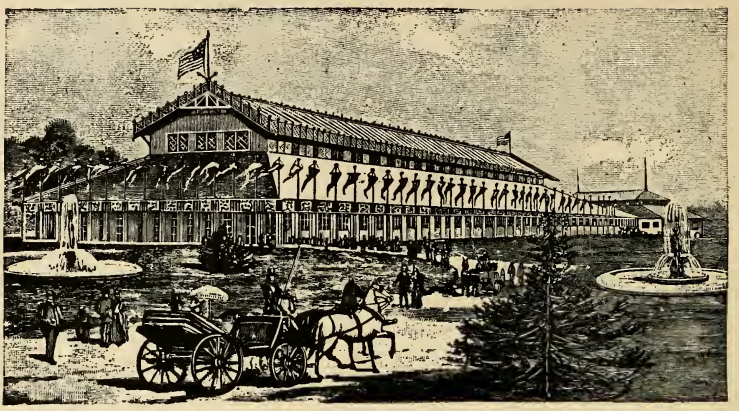
FEW departments of the World's Columbian Exposition have in them exhibits of a more varied character, or more important, than Agriculture, Live-Stock, Forestry and the Dairy. On the exhibits contained in the departments including these, it is probable that more of our welfare depends than upon any other portions of the Exposition that might be named. Recognizing this paramount importance, more entire recognition has been given by the officials in charge to these departments than in any previous Exposition. The same truth, however, might be asserted in regard to every other department of this great World's Fair. Four of the great buildings are assigned to the occupancy of these departments of exhibit in addition to a great area of stock barns and out-door exhibits. These four buildings are those known as Agriculture, Forestry, Dairy and the Live-Stock Pavilion. The first of

ABUNDANCE.
(*Martiny.*)
Agricultural Building.



FORESTRY AND DAIRY BUILDINGS.

these, and the largest, is almost a twin of Machinery Hall in size and magnificence. It faces to the north the Grand Basin, and looks

EXHIBIT OF DULUTH IMPERIAL MILL CO.

across toward the Manufactures Building. The east front is toward Lake Michigan, and the west looks across the Canal to Machinery Hall. These two buildings are connected by a colonnade, with a café at either end, and in the centre of this colonnade is an archway leading to the cattle exhibits, the sheds and Pavilion. From this connecting colonnade the view northward is one of the finest of the entire grounds of the Exposition. It follows the course of the Canal and the Lagoon for a mile, passing first between the buildings for electricity and for manufactures, then the sylvan shores of the Wooded Island, and terminates at the Gallery of Fine Art. The Building for Agriculture measures 500 x 800 feet, and its Annex toward the south is 300 x 500 feet. The main entrance is toward the north. On either side of it are mammoth Corinthian pillars 50 feet high and 5 feet in diameter. Pavilions are reared at each corner and at the centre of the building. These are connected by curtains, forming a continuous arcade around the top of the building. Entering at the

SIGN OF ZODIAC, AGRICULTURAL BUILDING.
(*Martiny.*)

DIANA, MAIN DOME, AGRICULTURAL BUILDING.
(*St. Gaudens.*)

main doorway, one passes through an opening 64 feet wide into a vestibule, and thence into a rotunda 100 feet in diameter. This is surmounted by a mammoth glass dome 130 feet high, and perched upon the summit of this is balanced a magnificent statue of Diana, now so famous. Through the main vestibule statuary has been designed illustrative of the agricultural industry. Similar designs are grouped about all of the grand entrances in the most elaborate manner. The corner pavilions are surmounted by domes and groups of statuary. The design of these domes is that of three female figures of herculean proportions supporting a mammoth globe.

TRIUMPH OF CERES, PEDIMENT OF AGRICULTURAL BUILDING.
(*Larkin G. Mead.*)

Within the Building for Agriculture are exhibits of a character which will attract not only those who are already interested in pur-

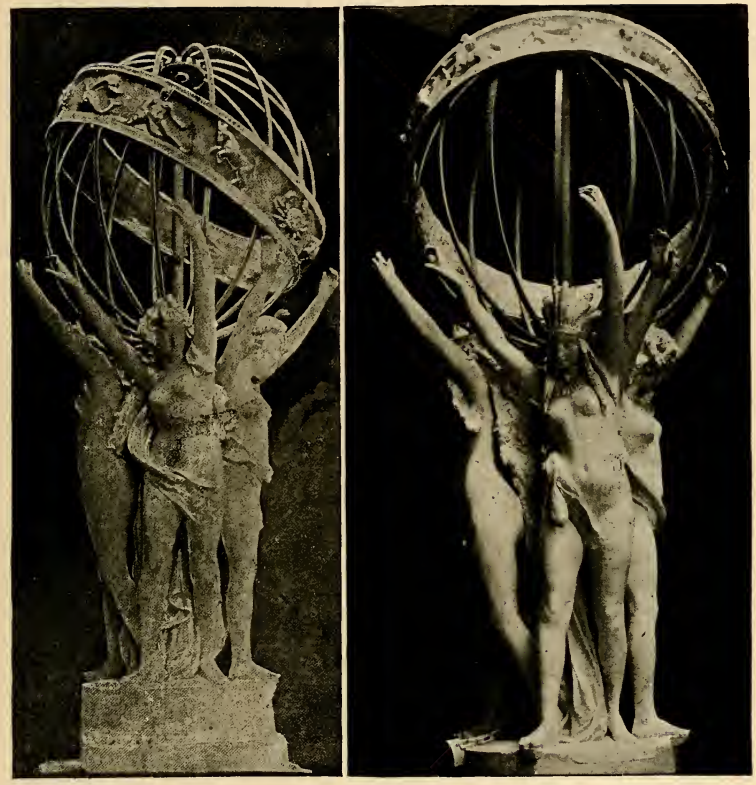
GROUP ON MAIN PIER, AGRICULTURAL BUILDING. (*Philip Martiny, Sculp.*)

suits kindred to that science, but beyond a doubt tens of thousands of others. Since the Centennial Exposition at Philadelphia great advancement has been made in all branches of farm work. The

Department of Agriculture has been given a place in the President's cabinet, and this was simply the official recognition of the increasing importance of this branch of industry. That department has become one of the most prominent institutions of the government; it has attained a firm foothold in the estimation of the peo-

CERES GROUP, AGRICULTURAL BUILDING. (*Martiny.*)

ple, and it has been productive of most beneficial results to the commerce of the country and to every one engaged in farm work. The experiment stations which are connected with the agricultural colleges of the country, and are supported by the government, mark another advance in the last seventeen years. Their work reaches out into all the fields of scientific research, seeking to as-



THE FOUR RACES, AGRICULTURAL BUILDING. (*Martiny.*)

sist in a practical way the farmers of the country. The subject of irrigation and its possibilities has been given its worthiest consideration during the same period. These suggestions indicate to a certain extent what a field there is for exhibits in certain new directions, all of which are carefully demonstrated. The Exposition presents the subject of irrigation with a care whose educational influence is not apt to be overestimated, and the result should be the reclaiming of vast areas in the West supposed heretofore to have

no value for agricultural purposes. Another notable exhibit is that in connection with the production of sugar from sorghum and the sugar beet. The South destroys the previous supposition that its crops were narrowed to rice, cotton and sugar by displaying a great variety of products from all portions of that section of our country. Another of the most notable features is an experiment

THE FOUR SEASONS, AGRICULTURAL BUILDING. (*Martiny.*)

station in operation. This, with its office, laboratories, etc., illustrates how the in-door work of a station is actually carried on. In another portion of the exhibit each station presents, by means of maps, diagrams, pictures, sets of publications, etc., a full statement of its lines of work, following out in detail the history of its career; but the important portion is not this individual showing, but a unified exhibit showing the kind of work done by the sta-

tions, the way in which they do it, and some of the more important results which they have reached. This exhibit was prepared by a

GROUP ON MAIN PIER, AGRICULTURAL BUILDING. (*Martiny.*)

committee of the Association of American Agricultural Colleges and Experiment Stations co-operating with the United States Department of Agriculture.

Much of the decorative work on the Agricultural Building properly finds its motive in subjects native to America, such as the potato, tobacco, maize, etc. The great frieze, showing the turkey, is especially happy, and calls forth the frequent remark that that bird should have been our national emblem instead of the eagle.

There are many groups of statuary adorning the exterior of this building, some of which have been referred to briefly before. Philip Martiny, of Philadelphia, is the sculptor of the following subjects: Twenty single "Signs of the Zodiac;" twenty single figures of "Abundance;" two groups of "Ceres;" two groups of the "Four Seasons;" four groups of the "Nations," each group

containing four figures, and four pediments representing "Agriculture." Over the main entrance is a handsome pediment, modeled by Larkin J. Mead, of Florence, Italy, representing Ceres, the goddess of agriculture.

The painted decorations of the Agricultural Building are the work of Geo. W. Maynard, of New York, who has chosen the Pompeian style as most appropriate for the classic architecture.

THE FLYING DUTCHMAN.

The main entrance has something of the appearance of a temple devoted to the worship of the deities, under whose protection the ancients believed agriculture to be. On the right, Cybele, the mother of Zeus and of Demeter, or Ceres, is presented in her chariot drawn by young lions, and on the left is her special protégé, King Triptolemus, to whom she gave a chariot, drawn by winged dragons, with which he was sent forth to teach the peoples of the earth the art of agriculture. Between these are figures representing "Abundance" and "Fertility." Each of the corner entrances is decorated with figures on either side, symbolical of the seasons, and above are friezes in which beasts of burden and other bucolic animals figure.

The groups included in the classification of this department are as follows: Cereals, grasses and forage plants; bread, biscuits, pastes, starch, gluten, etc.; sugars, syrups, confectionery, etc.;

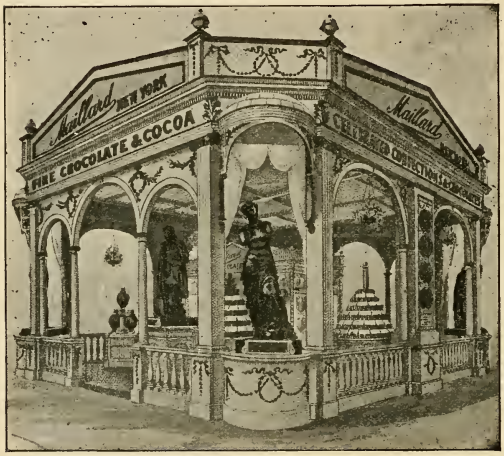
potatoes, tubers, and other root crops; productions of the farm not otherwise classed; preserved meats and food preparations; the dairy and dairy products; tea, coffee, spices, hops and aromatic vegetable substances; animal and vegetable fibres; pure and mineral waters, natural and artificial; whiskies, ciders, liquors and alcohol; malt liquors; machinery, processes and appliances of fermenting, distilling, bottling and storing beverages; farms and

THE LANDING OF COLUMBUS, IN GUM PASTE.
Exhibit of Schall & Co.

farm buildings; literature and statistics of agriculture; farming tools, implements and machinery; miscellaneous animal products, fertilizers and fertilizing compounds; fats, oils, soaps, candles, etc.; forestry and forest products.

In the main portion of the Agricultural Building the south half is devoted to the exhibits of the States of the Union, and the north half to those of foreign governments. The only violation of this order is that Russia, France and Italy encroach upon the south half of the portion reserved for the States. The American Sugar

Refining Company has an elaborate exhibit contained in the pavilion of unusually handsome form, where are exhibited more than two hundred samples of various kinds of sugar, as well as syrups and other saccharine products. Schall & Co., of New York, exhibit a scene to represent the Landing of Columbus, done in gum paste. This firm makes a specialty of confectioners' articles and ornaments, and the present exhibit is a triumph of skill. It weighs nearly 400 pounds, and is constructed entirely of confectionery, except the wooden base. It is five feet eight inches square, and nearly four feet high. At the four corners rise graceful statues, representing the four great continents. Other statues at the sides represent Washington and Lafayette, the Liberty monument, President Cleveland, the new battle-ship "New York," and other vessels. Behind all is the grand effort, the Landing of Columbus. The discoverer stands in the foreground, with drawn sword in his right hand, and his left supporting the banner of Spain, while his eyes are cast heavenward. About him are men in armor and crouching Indians. In the background his ship is seen anchored in the ocean. The modelling is excellent and the coloring very good.



MAILLARD'S PAVILION.

In the exhibits of bee culture A. I. Root, of Medina, Ohio, exhibits all sorts of appliances for caring for these dainty sugar-makers, as well as their products, manufactured and natural.

In the displays of canned goods Curtice Bros. & Co., of Rochester, N. Y., have an elaborate display, including their preserved fruits, vegetables and meats.

It is in the gallery of the building that we find the displays of food products, such as starch, pickles, catsup, soups, canned goods, preserves, flour, mineral waters, liquors, cigars, tobacco, chocolates, candies, condensed milk, macaroni, wool and kindred things. Various chocolate companies make attractive displays, including Walter Baker & Co., the W. M. Lowney Co., the Chocolat—Menier Co., Van Houten & Zoon, and others. Several of these have their own pavilions scattered through the grounds outside, where their dainty wares are sold in great quantities. Here in the Agricultural Building Stollwerck Bros. have a noteworthy pavilion. It is in the shape of a temple, of renaissance style, thirty-eight feet in height, and composed entirely of 30,000 pounds of chocolate and cocoa butter. These are applied over a wooden frame, and a most artistic effect is produced. The prominent feature of this exhibit is a statue of "Germania," ten feet high, modeled after the celebrated "Niederwald" monument, and sculptured out of a solid block of 2,200 pounds of chocolate. The pedestal is decorated

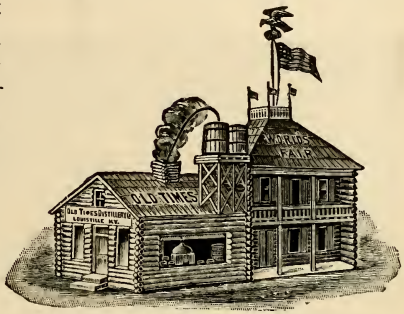
BLOOKER'S COCOA MILL.

with reliefs of the Emperors William I., Frederick III. and William II., as well as Bismarck and Moltke. The structure rests upon a

GERMANIA IN CHOCOLATE—GERMAN AGRICULTURAL EXHIBIT.

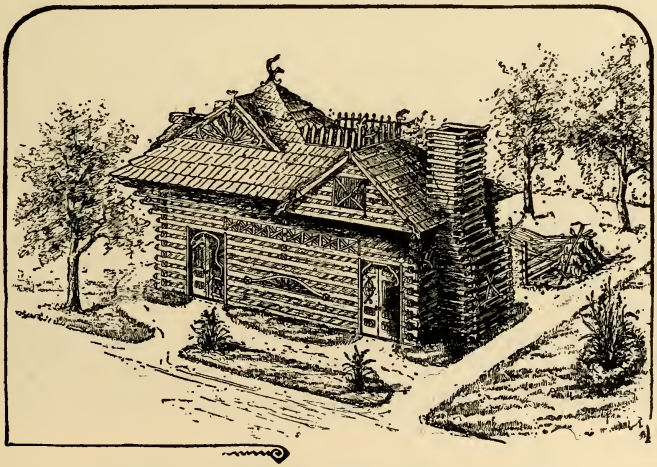
foundation formed by massive blocks of chocolate, and above the architrave six columns are crowned by flying eagles, solid chocolate, while the dome is decorated with the imperial crown of Germany.

Among the leading tobacco exhibitors the showing of F. Garcia & Co., of New York, is one of the best. Another is that of Julius Ellinger & Co., of Key West and New York, and the third is that of Jacob Stahl, Jr., & Co., of New York. All of these are handsomely furnished, displaying the cigars most artistically, and in a way to give the best impression for the fragrant weed.



BUILDING OF OLD TIMES DISTILLERY CO.

The Agricultural Building also houses the display of whiskey and beer manufacture. Messrs. Bernheim Bros., of Louisville, Ky., have, however, erected their own building, a log-cabin, where the processes of distilling are shown.



LOG-CABIN—CONTAINING EXHIBIT OF BERNHEIM BROS.

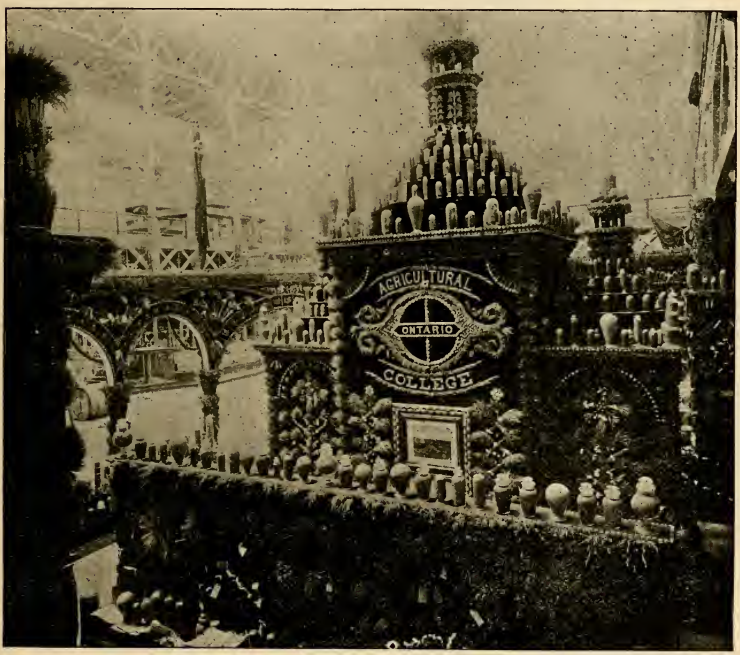
As one stands in the centre of the building, the State of Iowa, opposite Germany, catches the eye with a most creditable showing.

Grains, grasses and corn decorate her pavilion in brilliantly beautiful and varied forms. The columns, arches and pediments are decorated with corn, the bases showing flat panels of this grain.

GERMAN KALI WORKS.

Stars, flowers and running garlands of floral designs are made of colored corn. There are also panels with margins of grains of corn, and centres of heads of wheat and rye. The central pagoda

is similarly ornamented. In succession, to the west, come the States of Nebraska, Michigan, Wisconsin and Minnesota. Facing the aisle next southward are Massachusetts, Maine, Montana and New Mexico. California, Kansas, North Dakota, New Hampshire, Connecticut and Oklahoma complete this quarter of the building. Every one of the States has a creditable display that will do much to advertise its resources. In the southeast quarter of the building, the States in succession are Pennsylvania, Illinois, Ohio, Kentucky, Indiana, New York, North Carolina, West Virginia, Missouri,

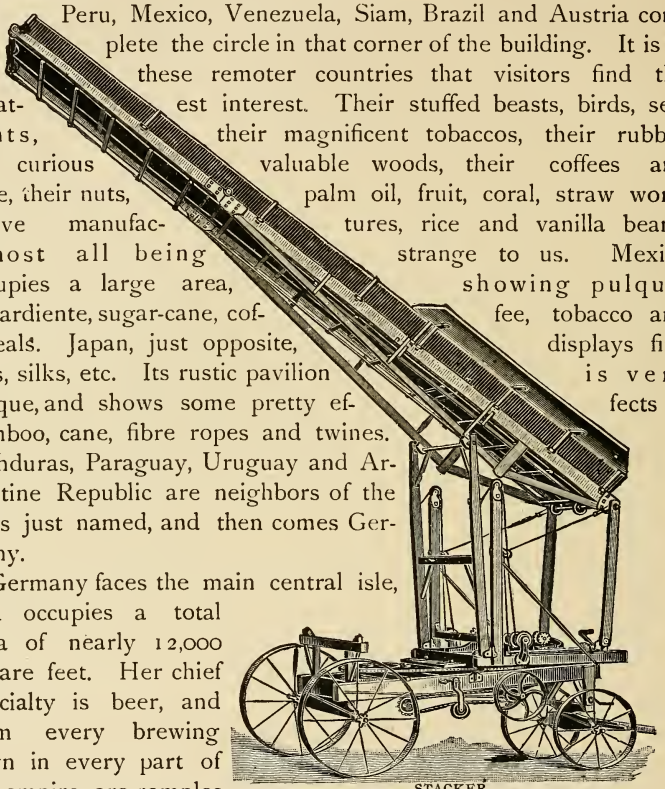


CANADA EXHIBIT, AGRICULTURAL BUILDING.

Washington, Utah, Arizona, Wyoming, Idaho, New Jersey, Florida, Virginia, Oregon, Delaware, Maryland, Colorado and South Dakota.

As one enters the Agricultural Building at the main portal and

turns to the right he first reaches the exhibit of Spain and the Philippine Islands, occupying nearly 4,000 square feet with a characteristic display. Chili, Cuba, British Guiana, Hayti, Liberia, Curaçoa, Peru, Mexico, Venezuela, Siam, Brazil and Austria complete the circle in that corner of the building. It is in these remoter countries that visitors find the greatest interest. Their stuffed beasts, birds, serpents, their magnificent tobaccos, their rubber and curious valuable woods, their coffees and cane, their nuts, palm oil, fruit, coral, straw work, native manufactures, rice and vanilla beans, almost all being strange to us. Mexico occupies a large area, showing pulque, aguardiente, sugar-cane, coffee, tobacco and cereals. Japan, just opposite, displays fine teas, silks, etc. Its rustic pavilion is very unique, and shows some pretty effects in bamboo, cane, fibre ropes and twines. Honduras, Paraguay, Uruguay and Argentine Republic are neighbors of the ones just named, and then comes Germany.

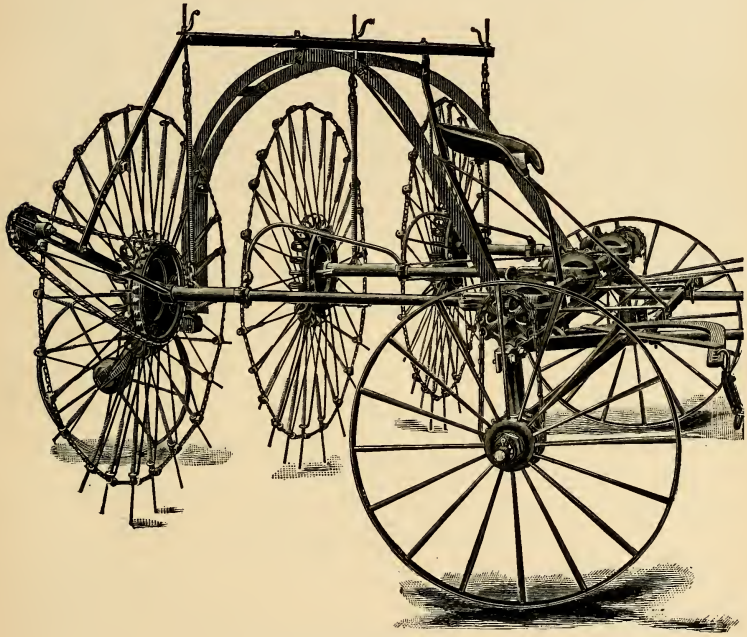


STACKER.
Exhibit of Aultman & Taylor Machine Co.

Germany faces the main central isle, and occupies a total area of nearly 12,000 square feet. Her chief specialty is beer, and from every brewing town in every part of the empire are samples of this malt liquor.

Going back to those foreign countries, which are neighbors of the United States in the southwest corner of the building, we find Russia with a large display, making wheat her especial exhibit. There is also an exhibit of the French Governmental teaching system. This is a perfect model of what an agricultural experi-

ment station and agricultural school should be. Italy's chief exhibits are those of wine, liquor, oils, olives and fruits. One-half of the building has not been covered. On the other side of the main aisle is Ceylon, with an exhibit of teas, spices, etc.; Great Britain, with 10,000 square feet and a most creditable display; and her colonies, Australia, Canada, the Cape of Good Hope and certain islands. Denmark, Sweden, Algeria and the French colonies,

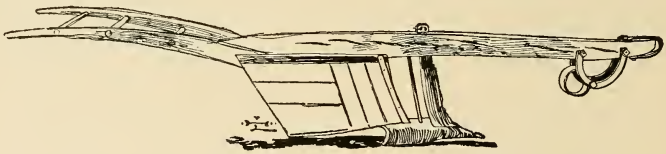


SIDE DELIVERY HAY RAKE.
Exhibit of Stoddard Manufacturing Co.

Holland, Colombia and Ecuador complete the area of the main building of agriculture.

The Dominion of Canada makes as fine a display here as in other buildings, Ontario, particularly, winning fame for her immense cheese, weighing eleven tons, the largest ever made.

The great exhibits of agricultural machinery are contained in the annex which extends southward from the main building. Among the companies which here have fine displays are Aultman, Miller & Co., of Akron, Ohio, manufacturers of harvesting machines; the Cutaway Harrow Co., of Higganum, Conn., maker of harrows, cultivators, plows and cider mills; the Aultman & Taylor Machinery Co., of Mansfield, Ohio, makers of traction engines, saw-mills, threshers, and other farm machinery; and Roberts, Throp & Co., of Three Rivers, Mich., makers of hand-car and corn sheller specialties. E. A. Porter & Bros., of Bowling Green, Ky., show cattle-feeding machines, and corn and cob crushers; Haworth & Sons, of Decatur, Ill., show a collection of those implements which have given to that town the name of the "Check-rower City." The Geiser Manufacturing Co., of Waynesboro, Pa., and Gaar, Scott & Co., of Richmond, Ind., display traction engines. The Stoddard Manufacturing Co., Dayton, Ohio, display tobacco transplanters and hay-rakes, and the Foos Manufacturing Co., of Springfield, Ohio, show mills, shellers, horse-power, etc. The Superior Drill Co., of Springfield, Ohio, show feed grain drills and fertilizer drills, besides the more ordinary farming implements.



PLOW MADE BY DANIEL WEBSTER, AND USED BY HIM ON HIS MARSHFIELD ESTATE.

Some of these are made with wood parts of bird's-eye maple or mahogany, with metal parts plated in silver, nickel and gold. One drill is made with glass sides and tubes, so that one may see the exact course of the grain and seed as it passes through the machine. Other exhibitors in this line are the Farmers' Friend Manufacturing Co., of Dayton, Ohio; the Skandia Plow Co., of Rockford, Ill.; the McCormick Harvester Co., of Chicago, and Wm. Deering & Co., of Chicago. The exhibit of the latter firm covers 2,000 square

feet. It is largely historical, and shows by means of models the stages of development from the primitive first binder to the simple

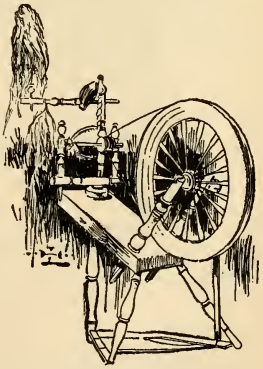
IMPLEMENT SECTION.

and perfect machine of to-day. Old style harvesters and reapers are shown in contrast with those of the present.

In this rapid résumé of the contents of the building it has been impossible to name but a small portion of the worthy exhibits. Taking one more swift glance around we find the displays of packing companies, including the Swift Refrigerating Co., the North American Packing and Provision Co., the Cudahy and the Armour exhibits.

Beside the brewing companies already named, the Anheuser-Busch Co., of St. Louis, and the Pabst Co., and the Best Co., of Milwaukee, all make pretentious displays.

Durkee & Co., of New York, display their spices in a fine pavilion of hand-

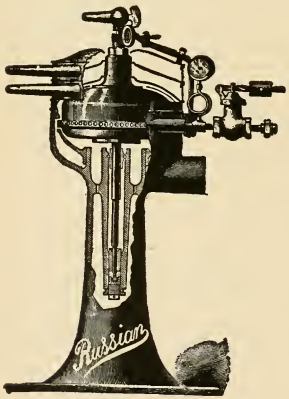


OLD SPINNING-WHEEL FROM CONNECTICUT.

carved wood, and Huckins' soups are shown in a pagoda decorated with white and gold. The Price Baking Powder Co. has

INTERIOR OF DAIRY BARN.

a large pavilion of birch, which makes an effective display. The Oswego Starch Co. has a pavilion which is also a gem. The American Cereal Co., and the Lorillard Tobacco Co., also have creditable displays. Brinker's Cotton Bale Exhibit consists of miniature bales made from cotton produced by slave labor in 1863. They are sold to visitors as souvenirs.



CREAM SEPARATOR.
Exhibit of P. M. Sharpless.

The second feature in this great department, which is entitled to a building of its own, is the Dairy interest. In the extreme southern part of the grounds of the Fair are the dairy barns for Jersey, Guernsey, and Short-horn cattle. In these barns the cattle entered for the butter-making and dairy contests are housed, fed, cared for, and can be inspected.

The Dairy Building is just to the west of the Forestry and Leather Buildings, and across the water, southeast from the Agricultural Building. It is 200 feet long and 100 feet wide, and cost $30,000. In addition to the exhibits from all countries of the world,

there is conducted in this building a dairy school lasting for the six months of the Fair, in connection with which a series of tests for determining the relative merits of different herds of cattle as milk and butter producers is also conducted. Being adjacent to the Live Stock Exhibit, yet farther southwest, this building is admirably adapted for that purpose. On the first floor, in the most conspicuous place, are displayed the butter exhibits, and just in the rear, in a space 25 by 100 feet, a model dairy and dairy school are conducted. Four hundred spectators can be seated in the amphitheatre which surrounds this room. The cheese exhibits are displayed on the second floor, and here, too, is found a café, in which dairy products of various kinds hold a conspicuous place. Among the prominent exhibitors here are Cornish, Curtis & Greene, of Fort Atkinson, Wis., who show butter and cheese implements of all sorts. P. M. Sharpless displays cream separators which skim the cream from fresh milk, which runs in a constant stream through a faucet into the top of the machine, and comes out at the bottom, the cream through one spout and the skimmed milk through another. Mr. Sharpless also has a display of his appliances in the Agricultural Building.

Another great feature of this department is contained in the Forestry Building, which is, in some respects, the most unique of all the Exposition structures. It occupies an area of 208 by 528 feet and faces Lake Michigan, near the southeastern extremity of the grounds. Its architect was C. B. Atwood, designer-in-chief of the Exposition.

More plainly than any other building on the grounds does this one proclaim its uses and purposes. It is, itself, a magnificent display of forest products, built entirely of wood and joined together with wooden pins; not a single nail or other piece of metal was used in its construction. It is entirely surrounded by a great colonnade, the roof of which is upheld by pillars, each composed of a group of three tree trunks, lopped with their branches, but with their bark still on them as they stood in their native forest. Various States of the Union and many foreign countries contributed these columns, and thus is formed one of the most unique colon-

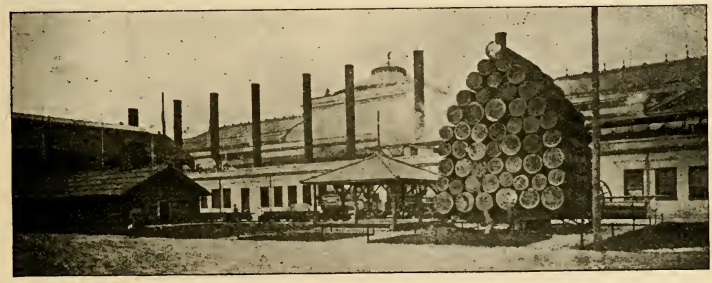
nades ever built. The walls of the building are of slabs of trees from which the bark has been removed, and the facings and other parts of the building are treated in a similar rustic manner. The roof is thatched with tan and other barks. Around the eaves is a cornice composed of interlaced timbers of various sizes. The pillars of the colonnade are ninety in number, composed of 270 tree

INTERIOR OF FORESTRY BUILDING.

trunks. Each of these bears a label giving its popular and botanical name and the locality whence it came.

The vestibule at the main doorway in the east side was furnished and put in place by the Southern Lumber Manufacturers' Association. The vestibule is of cypress and yellow pine, highly polished, to show the susceptibility of the woods of this section to use for interior decorations. The cost of this main vestibule was $10,000. About half of the States of the Union and many foreign countries exhibit here. Missouri is at the left of the entrance and Washing-

ton at the right, the first exhibiting largely deciduous trees and the other evergreen varieties. Michigan's display contains the largest load of logs ever piled upon a single vehicle; the load weighed 300,000 pounds, and was pulled by two horses weighing 1,700 pounds each. The sled and load are shown just as they were in the forest. To the west of the stock pavilion is a typical loggers' camp, built as an exact reproduction of the camps in which Michigan lumbermen lived. There are also loaded log wagons and log trains, and a little farther west the great saw-mill which has already been mentioned in connection with the machinery exhibit, but is as properly referred to that of forestry. Opposite Michigan's display is that of West Virginia, which shows 250 specimens of her forest products, polished and finished so as to show the grain, colors and characteristics of the different varieties.

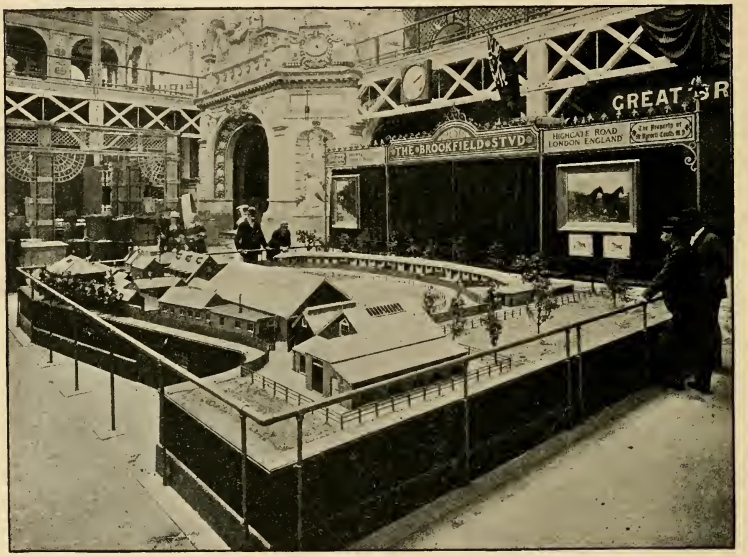


MICHIGAN LOGGING CAMP.

At the centre of the building all the States and countries have contributed large specimens to form an immense pyramid. Passing this, one comes to the display of Australia. The island continent has enclosed her exhibit in a stockade of planks nine feet high, and many of them several feet wide. For six feet up from the floor these boards are all polished. In variety there are myrall, rosewood, red bean, bloodwood, onionwood, and many others not found elsewhere.

Next comes Mexico, showing violet wood, mountain ebony, and many other curious and beautiful products, and then Brazil. The

pavilion of the latter is composed of trees whose interlocking branches form the walls. The entrance is through a beautiful rustic archway. Three hundred and twenty-one specimens of dye woods and ornamental woods are to be seen here. Across the aisle from this display are those of the States of Ohio, North



BROOKFIELD STUD, LONDON, ENGLAND.
Property of Burdett Coutts, Esq., M. P.

Dakota, Wisconsin and Kentucky, all with creditable exhibits; and still to the north are Nebraska, Minnesota, Louisiana, Virginia and Pennsylvania. Amid these exhibits of our own States is a section devoted to Spain, the Philippine Islands and Cuba. They show ornamental woods in unique and beautiful variety. At the extreme north end of the building, and facing the centre aisle, is the display of Japan. The showing made by this empire is very creditable and noteworthy from the fact that it is the first exhibit of native wood ever made outside of its own borders. Honduras adjoins Japan, and then India comes in the corner of the building. Return-

ing southward we now come to the exhibit of Paraguay, where are displayed 321 varieties of timber from twelve inches to four feet in diameter. Bark and dye-woods are also shown in abundance. Next to the south is Germany, their fine display rendered more interesting by the exposition of their tree planting and preserving and other scientific forestry displays. Between Germany and Brazil is the exhibit of the Argentine Republic, a grand collection of dye, building and ornamental woods.

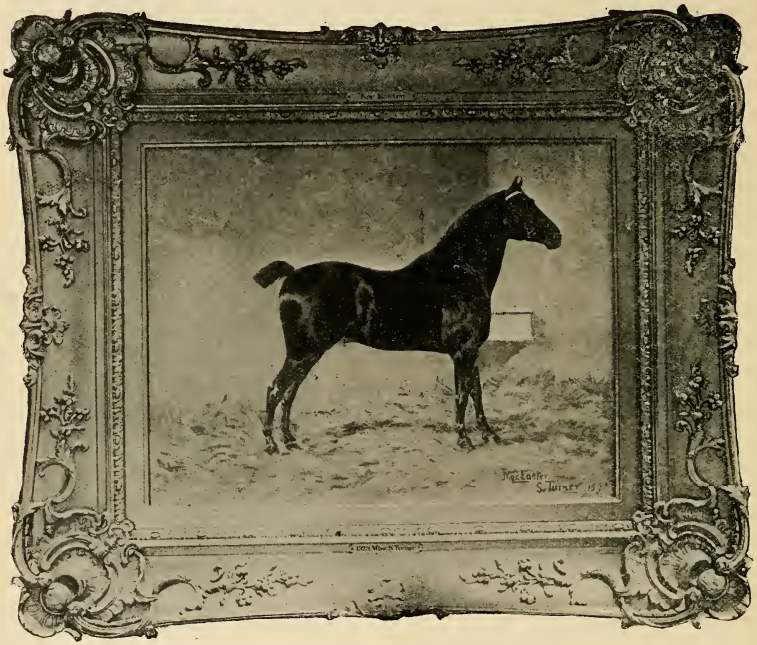
More than half of the building has not been covered. Crossing the main aisle southward and going through the exhibit of Russia, one reaches the displays of France and Siam. Oregon and Colorado are near neighbors, and then Canada, which occupies the largest space granted to any foreign country. Every one of her provinces is represented most attractively. Still farther south in

WINDMILL EXHIBIT.

this building an investigation of the exhibits of Trinidad, Connecticut, North Carolina, New York, Indiana, California, Utah and Massachusetts brings the wayfarer to the section devoted to manufactured goods. This includes all sorts of wooden ware, both useful and beautiful and well worthy of attention.

A department of its own, but intimately connected with the agricultural display, is the Live Stock Department. Live Stock forms one of the most important displays at the Fair. The competitions

include a kennel show, a display of fat stock and of horses, mules, sheep, swine, poultry, pigeons and pets of all kinds. For these purposes there has been erected a great oval pavilion, or arena, adjacent to Agricultural Hall. The exterior is of staff and stucco, and the interior an open arena 400 feet in length with ten tiers of



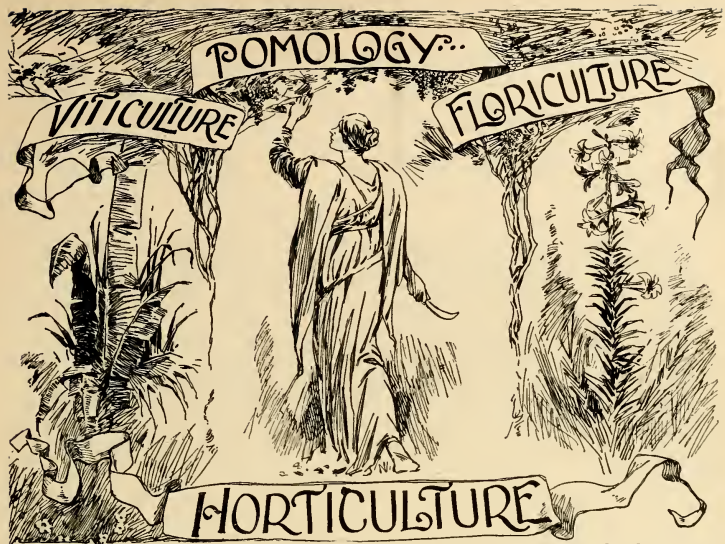
NOR'EASTER. (*Painting by Miss S. Turner.*)
Exhibit of Burdett Coutts, Esq., M. P.

seats and a broad balcony. Fifteen thousand spectators can be seated at one time. There are sixty-four stalls for the accommodation of live stock under the seats of the arena, while the stock barns to the south are sufficient to shelter thousands of head of cattle. The arena is floored with tan-bark and is the most satisfac-

tory structure of the kind which has ever been erected. While covering this portion of the grounds, the visitor will naturally observe the distillery exhibit which has been already mentioned, the immense flock of wind-mills, with wheels all whirling, ranging from the most modern air motor to the earliest Holland mill; and the outside exhibit of agricultural implements, all of these latter properly belonging to the agricultural department and its accessories.

No previous Exposition ever paid so much attention to perfecting the display in the agricultural exhibits, and this fact is appreciated by the immense rural population of our country. Every facility is provided them for investigation and observation, and including the buildings of Forestry, Dairy and Live Stock which belong to the agricultural department, the space reserved for this purpose is second only to that of the leviathan, the Manufactures Building. By the relative importance of the agricultural industries in the United States it is eminently proper that this is so.

Horticultural Building
Copyright by 1892
Ottesen & Co. Chicago



THERE are four great domes which are notable features in the group of World's Fair Buildings—those constructed over the centre of the Administration, Government, Illinois State and Horticultural Buildings. Of all these, the latter rising like a great soap bubble of glass from "The White Palace" is the most graceful and the most airy in its beauty. The building, of which this is the most prominent feature, faces east on the Lagoon, immediately south of the entrance to Jackson Park from Midway Plaisance. Across the water is the beautiful Wooded Island, and then after another sheet of water the Government and Manufactures Buildings. This location, with a broad face toward the sylvan scenery of the Lagoon and the Island, is an ideal one. It is, at the same time, appropriate that a structure for the purposes for which this one is intended should have such a location in the portion of the Park where nature holds strongest sway. Between the building and the Lagoon are beautiful lawns and a flower terrace for outside exhibits, including tanks for nymphæas and the Victoria Regia. The front of the terrace, with its low parapet between large vases, borders the water, and at

its centre forms a boat landing. The edifice measures exactly 250 x 1,000 feet, or more than five acres, with eight large greenhouses as an addition. The total cost was $325,000. The plan shows a centre pavilion with the two end pavilions, each connected to the centre pavilion by front and rear curtains, forming two interior courts, each 88 x 270 feet. These courts are beautifully dec-

FRIEZE IN VESTIBULE OF HORTICULTURAL BUILDING. (*Lorado Taft.*)

orated in color and planted with ornamental shrubs and flowers. The crystal dome which roofs the centre pavilion is 113 feet high and 187 feet in diameter. Under this are exhibited the tallest palms, bamboos and tree ferns that could be procured. In each pavilion is a gallery—those of the end pavilions being used for cafés.

PAINTING THE LILY. (*Taft.*) *Horticultural Building.*

Here is the most restful and attractive place of all on the grounds for refreshment and recreation. Music ripples from plashing waterfalls, the odors from sweet flowers and the glow of color from the same source are a combination of delights most conducive to the appetite and pleasure. The cafés are surrounded on three sides by an arcade, from which may be obtained charming views of the grounds.

Here are displayed a myriad variety of flowers, plants, vines, seeds, and everything in the horticultural world. Those exhibits requiring sunshine and light are shown in the rear curtain, where the roof is entirely of glass and not far

removed from the plants. The front curtains and under the galleries furnish room for exhibits that require only the ordinary amount of light. Under the great dome is to be seen one of the most beautiful effects of the whole Exposition. This comes from the miniature mountain, 70 feet high in the centre, upon which giant tree ferns and palms are growing as if in nature. A mountain stream dashes down the declivities from miniature crag to

LORADO TAFT'S STUDIO IN HORTICULTURAL HALL.
(*Showing Sculpture for the Building Under Way.*)

crag, sometimes hiding behind the foliage, and again sparkling in the light. Beneath this mountain is a cave 80 feet in diameter and 60 feet high, brilliantly lighted by electricity, where during the whole six months of the Exposition the experiment is in progress to see whether or not plants will grow as well under electric light as under sunlight. Throughout the many months that intervene

between the completion of this building and the opening of the Fair a magnificent and continuous floral exhibit was made in the Horticultural Building and in the Greenhouses adjoining; but this exhibit of the past is dwarfed by the horticultural and floricultural display that fills every nook and corner of the building since the time of the opening of the Fair.

The Horticultural Building indicates its own purpose more accurately than any other structure on the grounds except the Forestry Building. It has the aspect of an enormous green-house, and immediately suggests its adaptability for the purposes intended. Its long, low galleries with glazed roofs, admitting a flood of light, are well adapted to the preservation of growing plants, shrubs and trees. At the same time, the building harmonizes entirely with its surroundings. The style is Venetian renaissance, of the Ionic order, with a broad frieze decorated with cupids and garlands. The treatment is gay and joyous to conform to the lightness of the structure and the character of the exhibits. In front of the central pavilion is a high, ornamental pylon forming the main entrance, the recessed vestibule decorated with statuary. On the face of the pylon are groups, one on either side, representing the "Sleep of the Flowers" and the "Awakening of the Flowers."

The sculptor, Lorado Taft, has described the artistic sculpture and statuary in a series of lectures on the "Architecture of the World's Fair." Aside from the frieze, the sculptural decorations of the building consist of six single figures and two large groups. On the eastern front of each pavilion, at the ends of the building, are two figures placed on the level of the second story. The one on the south is called the "Painting of the Lily." The figure of a nymph is represented holding the lily and regarding it intently, with her brush poised in the air. The ancients attributed to these spirits of the wood and field the care of plant life. The next figure is symbolic of the cultivation and use of the grape, and represents a faun, a joyous, soulless creature, holding in one hand a brimming beaker and in the other a bunch of grapes. The drapery of this figure is the tiger skin, a favorite costume of Bacchus, the god of wine. On the north pavilion is the draped figure of a woman, in-

tended to personify the study of botany. In her hand she holds the scroll on which is inscribed the lore of that science. The last figure, at the extreme north of the building, represents a gardener of the ancient type examining the bursting buds of the vine.

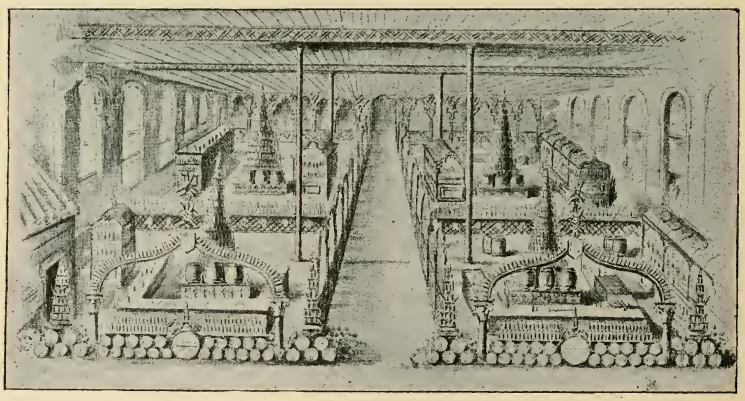
A VISTA OF TROPICAL PLANTS.

Just inside the vestibule stand two figures, each ten feet in height. The one on the right is a light, airy personification of "Flora." She is poised on tiptoe, and with outstretched arms holds aloft a flowering branch to which she turns her smiling face. Around her feet are plants and blossoms, profusely decking the earth, in response to her glad presence. On the opposite side is a figure of "Pomona." Her form is a full, matronly one, her smiling face suggesting amused disappointment as she struggles with an overflowing basket of fruit, which, in spite of her development, she is unable to lift.

The principal sculptural decoration of the building consists of

two large groups just outside the main entrance. On the south side is the composition called "The Sleep of the Flowers." It represents the artist's conception of autumn. The sculptor endeavored to suggest here the quiet, almost melancholy spirit of autumn, and with this object in view has kept all lines as harmonious and graceful as possible. The faces of the two sitting figures suggest sleep, and even the standing figure looks mournfully down upon them as if she, too, would soon join them in their slumbers. The only touch of animation is the single belated "Cupid" who sits contentedly absorbing a bunch of grapes. This fruit is shown hanging in abundant clusters from the rocks on either side. At the feet of the figures is placed a branch of withered oak.

On the other hand is the Springtime group, called the "Battle of the Flowers," or sometimes the "Awakening." In this the artist has tried to express the vigor and push of awakening



SPANISH SECTION, VINICULTURE.

vegetation by means of broken and angular lines, making the composition as great a contrast as possible to the Autumn group. In the composition are the figures of three nymphs, a faun and two cupids, all laughing heartily as they pelt each other with buds and blossoms. The faun is engaged in binding a garland around

UNDER THE DOME.

UPPER SECTION OF COCOANUT PALM.

the waist of the central figure, while she, in turn, has her arms full of flowers which she uses in the mimic warfare. The figures in these groups are about eight feet in height, and the work required several months. The artist's principal assistant in the execution of this statuary was his pupil, Miss Julia Bracken.

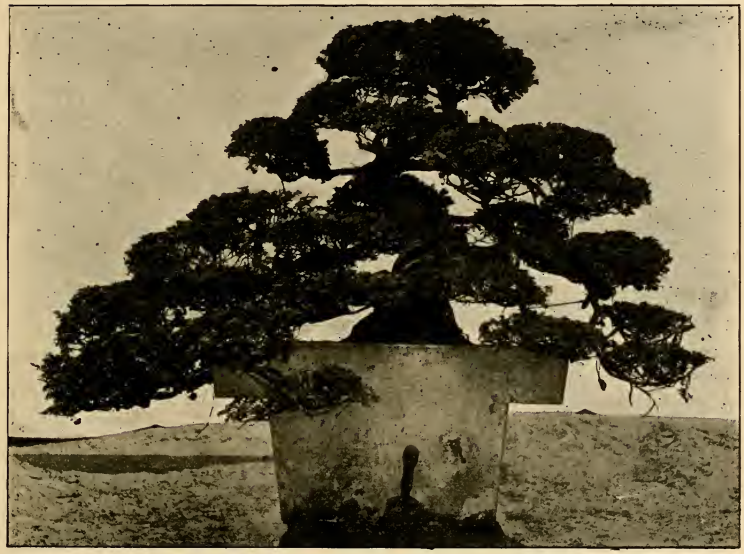
The frieze around the inside of the dome was painted by C. C. Coleman. It is composed of festoons and wreaths of the passion vine, while the wreaths entwined the names of men famous in horticultural and kindred arts.

The groups included in the classification of this department, of which J. M. Samuels is chief, are as follows: Viticulture, manufactured products, methods and appliances; Pomology, manufactured products, methods and appliances; Floriculture; Culinary vegetables; Seeds, seed-raising, testing and distribution; Arboriculture; Appliances, methods, etc.

The south pavilion is devoted to the exhibit of wines. Here Australia, France, Russia, Austria, California, Canada, Japan, Germany and Spain occupy large areas where all the

A SPRAY OF HYDRANGEA—AUSTRALIA.

products of the juice of the fruit are shown in their perfection. Some of the displays are very elaborate and are worthy of the wide attention they attract. The exhibit of Spain extends northward into the east curtain, where it joins the displays made by Illinois, Texas, Missouri, Massachusetts, Indiana and Pennsylvania. These latter, however, are all of growing plants and flowers. Pitcher & Manda,

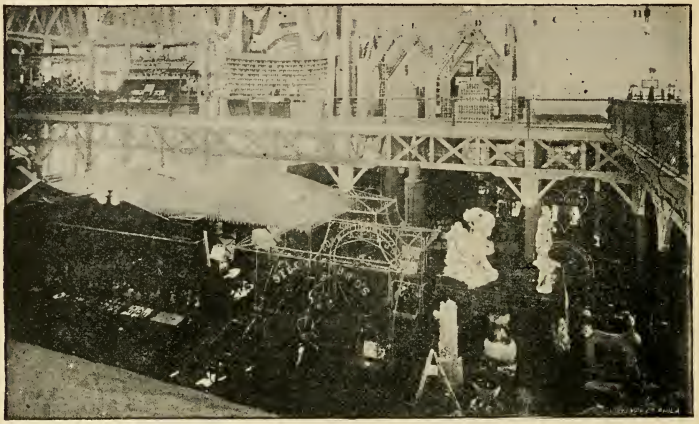


OLD JAPANESE TREE, HORTICULTURAL BUILDING.

of New Jersey, who occupy the north end of this space, adjoining Pennsylvania, have very much the largest display of any firm, as they transplanted here a special train-load of products from their nurseries.

The visitor has now reached the great central dome. Here the miniature fountain dashes its sprays over the rocks of the mountain, through valleys blooming with flowers and green with rarest palms, ferns, and trailing vines. The cave beneath is a reproduction of one of the chambers of the Mammoth Crystal Cave in the Black Hills of South Dakota, which has been explored for

thirty-four miles. These underground tunnels open and close into rooms glittering with diamond-like stalagmites and stalactites. The space around the mountain is allotted to the States of New



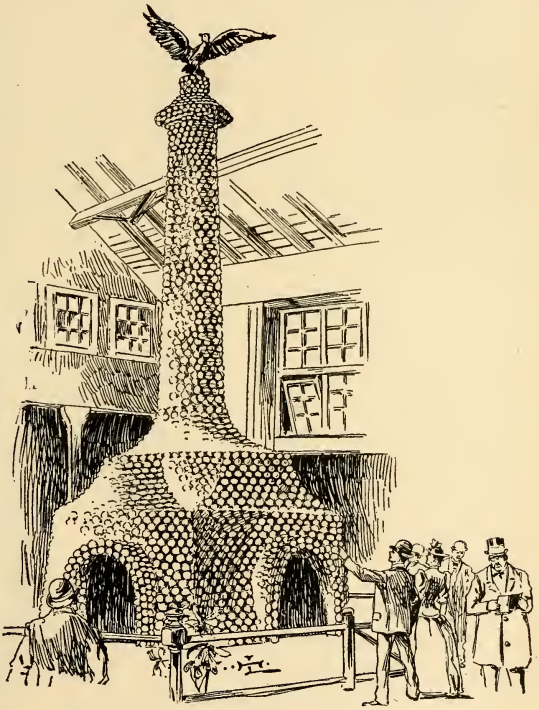
HORTICULTURAL IMPLEMENT SECTION.

York, New Jersey and Pennsylvania. Continuing northward into the next curtain, we enter the foreign exhibits, a display shared by Mexico, Great Britain, Belgium, Germany, Trinidad, Japan, Canada and Australia. The tropical countries show to visitors wonderful vegetation of rarest beauty. Trinidad has orchids, ferns and palms surrounding a great gilt lion of sculptured beauty, which guards the north end of the curtain. Australia's plants are as strange as her animals and attract universal attention. Japan shows a number of the wonderful dwarf trees, oaks, pines and others, perfect in every detail, hundreds of years old, yet growing in small flower-pots and extending but a few feet in height. The trunks are gnarled and rough as those of forest giants, and the effect produced is as if one were looking through the small end of a spy-glass toward one of our own American monsters.

In the north pavilion are shown manufactured products properly belonging in this department. There are machinery and ap-

pliances of all sorts for lawn and flower-garden cultivation, and seeds, ornaments and varied other exhibits.

Returning southward through the west curtain we find a large area devoted to the Pomological exhibits. Tray after tray of luscious fruits are placed before the visitor, including those from every clime, tropical, temperate and northern. Spain, Mexico, Australia, Great Britain, Colorado, Oregon, Missouri, Canada, Italy, France, the Latin-American countries, California, and almost every other State of the Union, show what they can produce in these tempting fruits. It is useless to attempt to name them all, for it would simply be to make a list of every fruit that the world produces. In the court enclosed between the northeast and northwest curtains of the building is an orange and lemon grove from California, showing the perfection to which the cultivation of these fruits has been carried. In the southerly court is a magnificent display of aquatic plants, and adjoining this an exact reproduction of an old-fashioned German wine-cellar.



THE MONUMENT OF ORANGES.

PINEAPPLE.

To attempt to merely mention the most beautiful of the exhibits in the Horticultural Building would be like placing before the reader an immense florist's catalogue. It is enough, therefore, to say that nearly every flower known to savage and civilized man finds in the building a representative. Never before in the history of flower shows has such a collection been gathered together.

Just west of this building, in its rear, are found the greenhouses. As a general thing, they are used only for the propagation and forcing of plants and flowers, which are afterward removed into the exhibit rooms, or set out in the parterres in front of the building, where are also the exhibits of a number of private forests.

The east front of the building faces the lagoon, with broad lawns between. These lawns are intersected with flower-beds, where growing plants and flowers are changed with the months, so that the display is always luxuriant. New York, Pennsylvania and New Jersey share most of this space.

As a matter of fact, however, the whole ground occupied by the Fair amounts to one great exhibit of horticulture. Century plants and cacti decorate every balustrade and railing, while every available spot is green with

TREE FERN—AUSTRALIA.

the brightness of a lawn or ornamented with trees and shrubbery. Around the edges of the lagoons are planted reeds, rushes and other semi-aquatic vegetation, so that a most natural effect is produced. The Wooded Island is a triumph of the landscape gardener's art, and throughout the heat of summer is a favorite resort for the weary who seek for shade. In the northern portion of it, surrounding the Japanese temple, a large space was assigned to Japan, and the gardeners of that country have used their best effort and have produced a delightful result. This Japanese garden is a centre of great interest. In the southeastern portion of the island another large tract is devoted to the rose garden, also a favorite. The group of little islands to the southwest and those to the east of the Wooded Island are not to be reached by visitors, and are valuable for their landscape effects. This bit of nature dropped down in the midst of the "City of White Palaces" is the final touch of perfection. Every writer who has told of the Fair, and every artist who has drawn it, has agreed to this, and all tales of its beauty end at this point. It is the work of landscape architecture and the horticultural department.

The work of this department is all the better realized when one remembers the condition of the Park when it was taken possession of by the authorities of the Fair. They found it a wilderness of sand dunes and they made it the rival of the most noted pleasure grounds of the world. Every tree that decorates the Wooded Island and shades the group of State Buildings shows the work of the landscape architect and the Horticultural Department. The beveled lawns which border the Court of Honor, the Basin and the North and South Canal are triumphs of conventional art. Leaving this portion of the grounds, the visitor finds in the sedges, rushes and other semi-aquatic vegetation along the shores of the Wooded Island and of the mainland along the Lagoon, as great a triumph of unconventional horticulture. These shores appear as naturally wild as do any of the marshes of the Illinois prairies, or as they might have hundreds of years before the prow of a white man's boat forced a landing among them.

Nestled among the trees on a small island just to the south of the

Wooded Island, but to which that name would apply just as well, are two dwellings characteristic of primitive civilization, the antipodes of one another as truly in structure as in the location from which they come. One is an American settler's cabin built of logs with the bark still on them, just such a cabin as the backwoods of

INTERIOR OF FRUIT DEPARTMENT.

Kentucky or Tennessee can show to-day in their secluded districts. It is a reproduction of the cabin of one of America's quaintest characters, Davy Crockett. In the cabin are many relics of the noble old hunter and of other heroic pioneers of the western frontier. Before it stands one of the old-fashioned emigrant wagons with canvas cover, while the fittings within are in harmony with its exterior.

But a short distance to the east, and directly opposite from this cabin, is the hut of an Australian squatter. It is constructed of bark, and is even ruder than the American cabin. In our climate it would be but a poor shelter, and one cannot envy those who have been compelled to use it as a residence. Within it are seen whips, saddles, sheepskins, and all manner of utensils, such as are in every day use among the frontiersmen of that country.

The view looking north down the Wooded Island is possibly the most delightful of all in the Fair, or at least second only to that of

the Grand Basin. It comprehends all the buildings which line the lagoon on either side and terminates with the group of State and Foreign Buildings and the classic Art Gallery. The rose garden at the south end and the Japanese garden at the north end are centres of interest and attraction.

During the later months of the Fair the Wooded Island has been the scene of many illuminations. From the branches of its trees thousands of incandescent electric lights, as well as thousands of Japanese lanterns, shed their radiance over its natural beauty. At such times the walks are always thronged with delighted visitors, and it is considered to be one of the most artistic and delightful decorative effects of the Fair.

Fish and Fisheries Building
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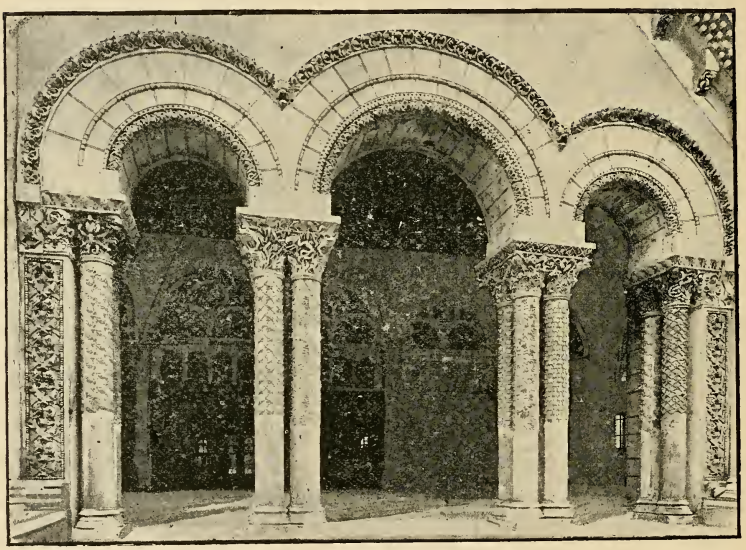
FISHERIES

By Capt. J. W. COLLINS, *Chief of Department.*

THE most graceful, and at the same time the most unique, of all the structures of the Fair is the Fisheries Building. Its architect, Henry Ives Cobb, of Chicago, has been called courageous for adopting a design so unconventional in form and ornamentation. But this scarcely does justice to the genius that mastered what appeared to be unsurmountable difficulties, and wrought out an architectural victory where success seemed unattainable. No ordinary building would meet the requirements of the Fisheries Exhibit, and the banana-shaped islet, which was the original site, would not admit of the erection of any conventional structure of suitable size. How was it possible to overcome these difficulties? Fortunately the writer was able to materially assist in solving the problem. His knowledge of the requirements, both as to size and form, enabled him to roughly sketch out the floor plan and the elevation of the annexes, the former being adapted to the peculiar form of the site, and the latter essential to the success of the aquarial exhibit. It was, however, nothing less than inspiration that enabled the architect to grasp the salient points, and, while preserving them absolutely, weave into the fabric a grace, a beauty and uniqueness of ornamentation, combined with a fitness for its purpose, that have attracted world-wide attention. No, it was not a courageous effort on the part of Mr. Cobb: it was something more than that—it was the ability to accept conditions that might have dismayed another, conditions which he could not control, and to wring from them architectural success such as is seldom equalled.

The building consists of a central structure, rectangular in shape, and two polygonal buildings, one at either end of the main struc-

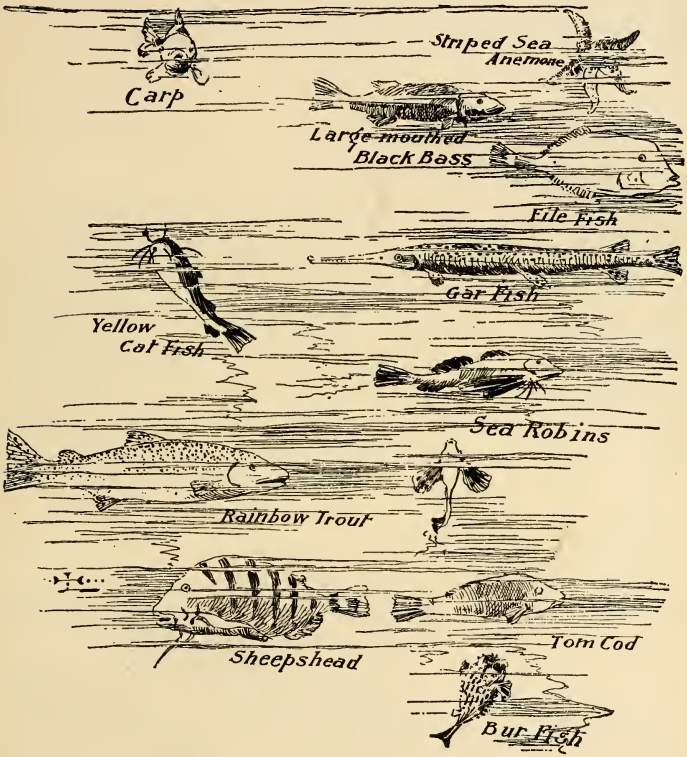
ture, with which they are connected by curved arcades. The total length of the curved structure is about 700 feet, but the curved arcades are narrow and offer no space for exhibit purposes. The central structure measures 365 x 165 feet, and the annexes have each a diameter of 135 feet. The type which the building copies is the Spanish Romanesque, and to many visitors its uncommon form and the unique decoration make it the most attractive of all the struc-



ENTRANCE TO FISHERIES BUILDING.

tures. The pillars and arches of the colonnades of the building are richly and ingeniously decked with marine forms of endless variety, turtles, crabs, lobsters, fish of many kinds; the effects are invariably beautiful. The main building is provided with two grand entrances. These are through loggias about 80 feet long, projecting 41 feet beyond the line of the main building, and flanked at each corner with lantern-like polygonal towers. Surmounting the quadrangular first story is a great circular story capped with a

conical roof. A graceful open turret crowns this roof, and four smaller towers surround the base. The double row of engaged columns, which form the exterior face of the building, have capitals,



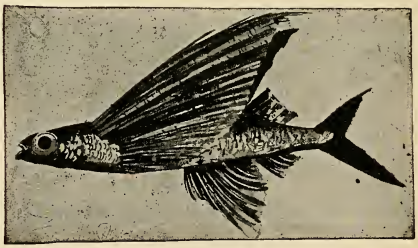
FISH IN THE AQUARIUM.

which are formed of yet other varied groupings of marine forms, while the delicate open work of the gallery railings display as many different fishes. The circular story is surrounded by a broad exterior gallery, and the four flanking towers of the entrances and

the four smaller towers of the central roof terminate in open turrets from which delightful views of the grounds are obtained. The roofs are covered with glazed Spanish tile. The east and west pavilions, which are reached by the curved arcades, are favorite resorts for the public, especially for those interested in fishing, either for sport or commercial purposes.

SUPERINTENDENT OF AQUARIUM.

The east pavilion is built for exhibiting live fish in aquaria. In the centre of this building is a rotunda nearly 60 feet in diameter. It surrounds a basin about one-third the width, and this in turn contains an irregular-shaped mass of rock, that rises from the centre to a height of ten or twelve feet. From the crevices and projecting points of this craggy monument ny streams of water fall to the basin below. In the pool are various kinds of fish; the black bass, the lake sturgeon and the giant cat fish contrasting prettily with the more gorgeously colored golden ides and other ornamental species. The larger series of aquaria, ten in number, surround the pool, with a passage-way between sixteen feet wide. These have a capacity ranging from 7,000 to 27,000 gallons of water, the largest being about fifty feet long. In the arched tympana above these are wrought out many curious designs of aquatic import—gigantic



FLYING FISH.

flying fish are being pursued by sword fish; alligators are lazily disporting themselves on a reedy bank or swimming in a bayou; while another group represents the sportive frog engaged in characteristic gambols, or quietly sitting on the oozy shore.

SWORD FISH.

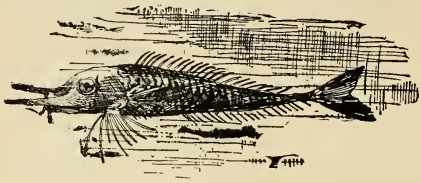
Another row of smaller aquaria extend around the building, next to its outer wall, an arched walk leading between the outer and inner row of tanks, and affording the visitor an opportunity to see a wealth of aquatic life, marine and fluvial, such as was never before seen at a World's Fair. Here the royal brook trout, whose spotted irridescent sides gleam beautifully, and whose graceful môtions hold crowds entranced, divides honors with the plebeian catfish, the carp, the many-hued sea anemone, or the odd-shaped horseshoe crab, that carry on their life-work here quite indifferent and unconscious of the thousands of human eyes that gaze upon them hour after hour, absorbed to such an extent that the remainder of the Fair is quite forgotten.

SKATE FISH.

Passing out of the pavilion and through the curved arcade, we enter the main hall of the Fisheries Building. Here has been

JAPANESE SINGLETHORN.

gathered and grouped nearly all that relates to commercial fishing, scientific research and fish culture. Distant Australia and Japan vie in friendly rivalry with the countries of Europe and North and South America in showing to the world what is most interesting in their fisheries, or to them most valuable from the standpoint of trade.

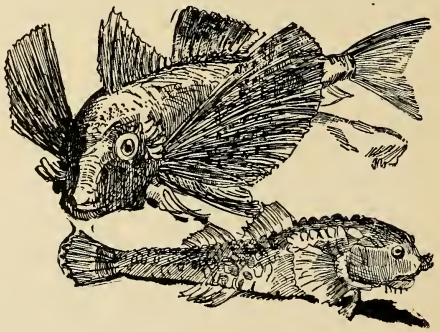


ORIENTAL GURNARD.

Thirteen foreign countries are represented. These are Norway, Sweden, Russia, Germany, France, Great Britain, Japan, Australia, Brazil, Mexico and Canada.

The inhabitants of two-thirds of the earth's surface, as well as of the air, are here in almost endless profusion and variety, demonstrating in the most emphatic manner the scientific skill, energy and devotion that have been necessary to bring together these collections.

The resources of art, of taxidermy; the naturalist's skill and modern methods of refrigeration, have been fully drawn upon. The wonders of aquatic life, in all their glorious brilliancy of color and marvelous variation of form, are reproduced in paintings, colored lifelike casts of plaster and gelatine, in mounted specimens, in alcohol, in translucent blocks of ice and beneath the glass fronts of refrigerators. The mind is bewildered. Fish of all the earth, corals, sponges, algæ; mollusca of all kinds, including oysters, clams and many other forms of shells; squids of various sorts and the great octopus—the devilfish of British Columbia—



SAPPHIRE GURNARD AND ARMED BULL-HEAD.

armed with sucking disks on its tentacles; star fishes, sea urchins, holothurians, lobsters, crabs, cray fish, shrimps and other kinds of crustacea; reptiles, such as turtles, terrapins, frogs and alligators; aquatic mammalia—whales, porpoises, seals, sea lions, white bears, otters and beavers—jostle and crowd each other at every turn. The baby cod or trout, newly hatched, stands in strong contrast to the 82-pound salmon from the Columbia river (sent here by Oregon in a solid block of ice), or the monster sharks or sword fish of the Atlantic.

SKELETON OF WHALE.

Aquatic birds also appear in great numbers and in various groupings. A family of eider ducks, happy in their Arctic home; an osprey feeding upon a fish; waders stalking about on oyster beds; the great sooty albatross; the tiny stormy petrel (or mother Carey's chicken) that roams with tireless wing to meet the ocean voyager on every sea, and the great herring gull that heralds with hoarse screams the approach of schools of fish, are only a few of the many specimens gathered here. Even the extinct species are not forgotten. The Great Auk (*Alca impennis*) is pictorially repre-

sented. It is interesting from the fact that in the early days of American colonization it was enormously abundant and furnished food to the fishermen of those days, though it finally succumbed to the rapacity of the feather hunters. Even the plant life has not been neglected, and here and there those interested may get glimpses of many beautiful forms that lend additional interest to the collection. And who will tell how much of "labor of love" is embodied in the arrangement of delicate fronds of sea weed; of the grouping of fish, birds and shells, etc., around a beautiful picture

MODEL OF INDIAN FISHERMEN. PART OF MINNESOTA EXHIBIT.

of their natural home, as in the case of the exhibit of the High School of San Diego, or in the deft arrangement of common beach shells, sea weeds, etc., into groupings that give all the effect of a painted picture at a little distance? Dried specimens, stuffed, cast, painted, photographed or even skeletonized, as in the case of a big humpback whale from Puget Sound, pass in review, a series of object lessons in natural history, not only instructive from a standpoint of specific differentiation, but particularly impressive when considered in their relation to commerce and the welfare of mankind.

Maps of fishing grounds, in river, lake or ocean, show where the various objects of fishery exist in the greatest abundance. These

regions are the natural resorts of the toilers who venture out to gather the harvests of the deep in all climes. Here, then, we can trace the limitation of the work of the fisherman, considered from a purely geographical standpoint, though the maps have the additional merit of indicating the principal centres of distribution of certain kinds of aquatic animals.

Even the fishermen themselves are well represented by photo-

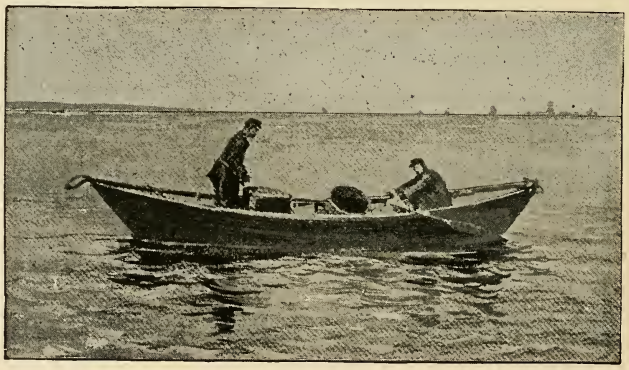
NORWEGIAN FISHERMAN.

graphs, models and lay figures. The strong-featured Norwegian fisherman, clad in appropriate garb, looks lifelike enough to speak, as he sits grasping the tiller of his boat; the figures of Cape Ann men at the wheel and aloft on the lookout for fish, and the miniature fishermen of Holland and Japan are good examples of different types. Nor is the angler forgotten. Canada has given him the place of honor on the apex of her great "trophy," where, with rod, reel and long wading boots he stands in graceful pose, as if going to the stream he loves. Here, too, are the homes of the fishermen. They show us how he lives. There is a world of difference between the temporary rough board cabin of the Norse fisherman, the reed hut of the North Carolina mullet fisher—both being full size—and the neat and often beautiful cottages which are the homes of sea

toilers in New England. Associated with these are collections of antique furnishings of fishermen's homes, in colonial times, nautical instruments used centuries ago from Cape Ann, and the school houses wherein the children of fishermen are fitted for their life work.

And what possibilities are here for study in naval architecture, as applied to the fisheries! The limits of this article do not permit even a list of names of the different types.

Not only is it possible to trace the development of fishing boats from the settlement of America, but here, side by side, may be seen many varieties of fishing craft, in use at the present time, of this and other countries. The rude, primitive boats of the Amazon region, the birch bark and dugout canoes of North America—all of which



THE TYPICAL DORY.

are the same in form and construction as those in use when Columbus made his famous discovery—contrast strongly with the graceful, swift, and yacht-like schooners of Cape Ann, or the fishing steamers and beautiful catboat from Rhode Island.

Gloucester shows her fishing vessels, by model and photograph, from its settlement in 1623 to the latest prize-winning clippers designed by Edward Burgess, D. J. Lawlor and Capt. George M. McLain, the latter a Gloucester fisherman. The old Ketch, the

schooner of colonial times; the chebacco boat; the old time pinkey and the square stern "hooker" of forty or fifty years ago, stand side by side with the creations of modern skill, emphasizing the

NEW ENGLAND FISHING SCHOONER.
Painting in Gloucester Exhibit.

advance that has been made in this direction since the Puritans sought in the New World "a faith-pure shrine" and the opportunity to develop commercial fishing.

What tales of hardship and shipwreck are suggested by these models of fishing schooners! A few years ago, when flat, unsea-

worthy vessels were in vogue, a gale on the banks frequently sunk ten or a dozen schooners, which, with their crews, were reckoned with the "missing," after weeks of harassing uncertainty and weary watching for their return, by widowed women and orphaned children. Woven into the web and woof of the history of each vessel are stories of winter gales, of hairbreadth escapes from shipwreck

GLOUCESTER, MASS.
Painting in Exhibit of Gloucester.

on lee shores, of peril in fog and storm from being run down by "ocean greyhounds," and of experiences in Arctic weather, when the hull, rigging and spars have been coated with ice until progress seemed impossible and disaster inevitable.

One of the Rhode Island models represents the first fishing steamer ever built in America, while another is notable for having made the largest catch of fish in its fifteen years of service ever made by any vessel in the world. A fishing boat that steams twelve knots and catches a thousand barrels of fish in a single day is worthy of notice.

There are many curious flat-bottomed boats from Japan, built for

landing on the shores near the fishing grounds, where as a rule there are no harbors. In 1881 it was officially reported that Japan had 187,220 fishing boats. Among those exhibited is a model of the type called "Kawasaki," which is extensively employed in the cod fishery from the island of Yesso in Northern Japan.

There are no harbors on the coast from which these boats sail, and, therefore, it is necessary that they should land upon the open shore where the surf often runs very high. For this reason, flat-bottomed boats have generally been preferred by Japanese fishermen, and it is said that in beaching their vessels they adopt the same

BUILDING FISHING SCHOONERS AT ESSEX, MASS.
Painting in Exhibit of U. S. Fish Commission.

method as that in vogue among the fishermen on the northeast coast of England, who run their cobbles stern-first upon the shore.

Norway is especially rich in fishing boats of full size, and models of larger craft, while a model of the ancient Viking ship that was exhumed a few years ago at Godstadt, in Norway, not only suggests the origin of the smaller fishing craft now used in the "land of the midnight sun," but may possibly be intended as a reminder to

Americans that the descendants of the old Sea Kings have some right to the glory that comes from discovery of this continent. It may well be a matter of much interest to the antiquarian and naval architect that this ship of the ancient Norsemen had a form so symmetrical that it has not been improved upon during the thousand years that have passed since it is supposed to have been entombed. Nearly all of the smaller fishing craft of Norway now in use are of the same general type. Fully equipped open boats from different parts of the coast—used for hunting seals in the ice floes near Spitzbergen, cod boats from Lofoten, herring boats and mackerel boats—are here in many forms. There are models and pictures of fish freighters, with curious movable decks, that can be lifted ten or twelve feet high in order that the cargo of stock fish may be stowed beneath. The full lined "bankskiote," the whaling steamer and many others are here in miniature. One is tempted to make something more than a cursory examination of these sturdy fishing boats. The eye wanders instinctively from the boats and mute fishermen to the magnificent oil painting a few feet away—the work of a fisherman, too. There such a craft is seen scudding before a gale along a bold, rocky coast, held well in hand by the skill and courage that guides its helm, nothing daunted by the water that tumbles over the gunwale from the crest of a hissing wave, as the boat drives along under her reefed sail, the dark tan

NORWEGIAN EXHIBIT.

color of which contrasts beautifully with the green and white of the water, but almost blends with the cliffs against which the sea is foaming in cataracts of spray. This is a vivid chapter in a fisherman's life, one that thrills us with its realism.

Canada, too, has a noteworthy exhibit of fishing craft, from the birch canoe to the government cruiser that spends its time in the so-called "protection service." A full-size "Canso boat," sturdy

BRITISH BEAM TRAWLER IN A GALE IN NORTH SEA.

and strong enough to sail almost anywhere, attracts much attention. No better fishing boat of its size was ever built. Dug-out canoes from the Northwest coast, with their colored totems; cod schooners from Nova Scotia, from which province also comes a clinker-built "Sambro-Slicker," and lake fishing steamers and sail boats make up an instructive collection.

Clippers and lobster smacks from Boston—including a fine sec-

tional model showing the interior arrangement of a market schooner

FISHING SCHOONER RUNNING FOR MARKET.
Painting Exhibited by John R. Neal & Co.

—whalers from New Bedford; a pound net boat from North Caro-

lina, and a Chesapeake bugeye are here, and many others to which allusion cannot be made.

Fishing gear of endless variety is seen on every hand—nets, lines, bobs, sinkers. In short, one appreciates the force of John Bunyan's words, for surely

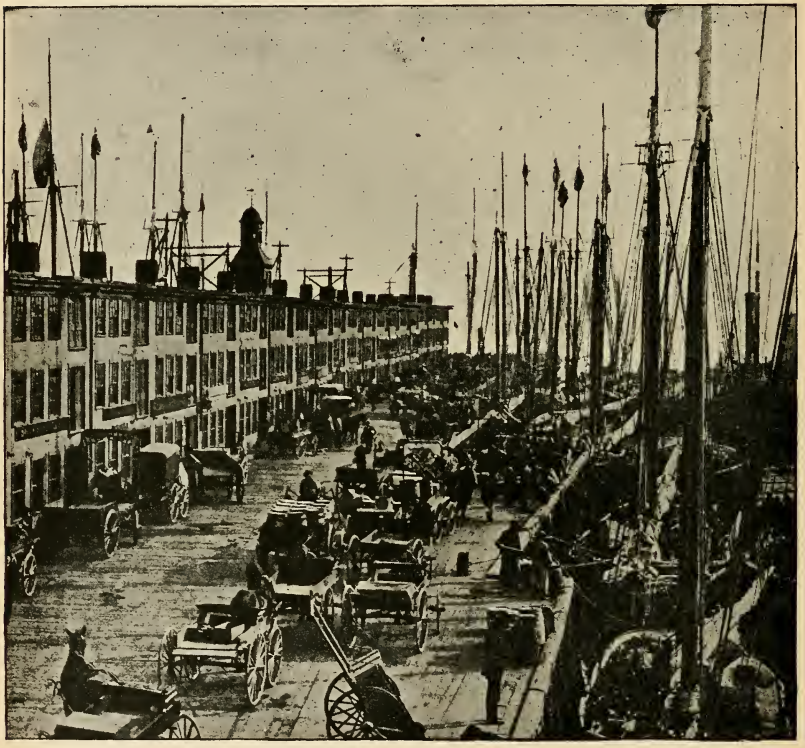
> "You see the way the fisherman doth take
> To catch the fish, what engines doth he make!
> Behold how he engageth all his wits,
> Also his snares, lines, angles, hooks and nets."

It is difficult to comprehend the wide difference (and all the intervening steps) between the rude wooden hook, carved with infinite patience by the Indian, and the finely tempered steel products of the white man's skill. The Kelp fishing line of the northwest coast and the silk, linen and cotton lines made in our factories; the gill-nets laboriously made of strips of whale bone or sealskin by the Eskimo, and the great purse seine that catches more than a hundred barrels of fish at a single cast; the rude spear of the savage and the fishing wheel of the white man—in the Oregon exhibit—that works automatically and literally "pumps fish out of the river," are contrasts in fishing appliances which are not only interesting, but constitute a series of object lessons that need only to be understood to attract much attention.

No part of the fisheries exhibit, however, offers a more interesting field of study than the methods of fishing, which differ as widely as the appliances employed and the habits of the fishermen. No greater extreme in the affairs of men can be imagined than that which exists, for instance, between the Eskimo, who patiently waits hour after hour, in the biting cold of the long Arctic winter night, for the appearance of a seal at its "blow hole" in the ice, and the white fisherman of Norway and the Atlantic coasts of America, who encircle hundreds of whales and porpoises in a great net and drag them to shore, or catch a fare of cod and haddock with miles of trawl-line.

Let us take a glance here and there at the illustrations of methods of fishery. A Boston firm, John R. Neal & Co., deserve

credit for the systematic manner in which it has illustrated the different phases of the New England deep-sea fisheries. One series of paintings tells the whole story of the voyage of a fishing vessel from the time the hooks are baited, and the schooner is



FISH MARKET, T-WHARF, BOSTON.
Painting Exhibited by John R. Neal & Co.

towed out of harbor, to the marketing of fish. The arrival on the bank, the setting of trawl lines, hauling gear, throwing the fish on board the vessel, dressing the catch, running for market, and various scenes at T-Wharf, the great fresh fish emporium of New England,

are depicted with lifelike exactness by large photographs that have been retouched and colored in oil.

One collection depicts the finnan-haddie trade. The fresh eviscerated fish is the first object in this series, and a beautiful painting of a smoked finnan-haddie, and the packing of haddies in boxes are the last.

PURSE SEINE MACKEREL FISHING—"BAILING-IN" THE FISH.
From Painting by Paul E. Collins—Exhibit of U. S. Fish Commission.

Another series, similarly colored in oil, shows all the important lighthouses from Cape Cod around Massachusetts Bay to Cape Ann, while immediately adjacent is a map, upon which is marked the location of these important guides to fishermen.

Near by is a sort of bas-relief painting illustrating various methods of fishing for cod, herring and mackerel, with gill nets, trawl lines and purse seines. This is so arranged as to enable one

to observe, not only what is being done above the surface of the sea, but also to look beneath it, where the lines, nets and seines appear in their proper place under the water.

Other photographs illustrate most graphically the hardships encountered by the fishermen in pursuit of their calling. These are mid-winter views of vessels as they arrive at Boston from the Banks. Hull, rigging and spars are covered with ice, and it requires no vivid imagination to picture the peril and suffering of those who have been exposed in gales, forcing a winter passage against the icy blasts, that sweep with almost resistless vigor from the north, freezing every drop of spray that flies, and sometimes leaving the vessel practically helpless, and almost like a floating iceberg. What harrowing tales of shipwreck, of sinking vessels, of wave washed decks and drowning fishermen, are suggested by these pictures. And with this comes the thought of how few there are who appreciate the effort it costs to procure those treasures of the sea which are so needful to the welfare of mankind.

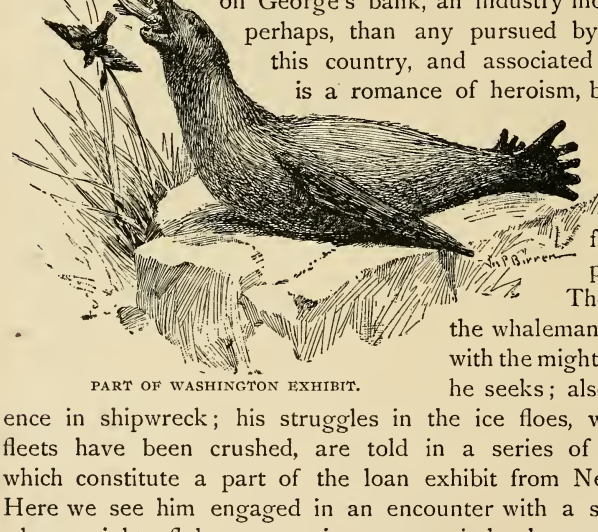
Rhode Island tells in a somewhat similar manner, through a series of enlarged photographs, the details of her trap fishery for scup, sea bass and other species, her scallop industry, and also of her great menhaden purse seine fishery, which rivals in importance the whale fishery of Nantucket in its palmiest days, as far as its product of oil is concerned. It also gives to the farmer a rich fertilizer that renders productive many acres that otherwise might not be available. Every phase of fishery is shown, from the time a steamer sails out of the harbor to the landing of her cargo. There is temptation to speak in detail of a fishery, concerning which the bare facts are marvelous, and seem like veritable "fish stories." The great purse seines, circling around the schools of menhaden that swim near the surface of the sea, frequently capture hundreds of barrels at a single cast, and instances are on record where nearly one thousand barrels have been taken. Gathered together in a glittering mass of irridescent, pearly color, they are hastily taken on board the vessel, with a great dip net operated by steam. The fish that joyously swam the ocean at dawn are ere nightfall converted into commercial products for the use of man.

227 WINTER COD FISHING ON GEORGE'S BANKS.

North Carolina shows the method of her various fisheries, prominent among which is the great drag seines—more than a mile in length—in use along her coast.

By similar object lessons Washington and Oregon illustrate their salmon industry on the Columbia river and Puget sound.

Gloucester, too, by models and by photographs, speaks of the methods of those fisheries which have made it foremost as a fishing port in America, and has carried its fame throughout the world.



PART OF WASHINGTON EXHIBIT.

One model of a vessel, with its crew at the rail, illustrates the method of hand-line fishing for cod on George's bank, an industry more perilous, perhaps, than any pursued by citizens of this country, and associated with which is a romance of heroism, blended with a solemnity that comes from great disaster frequently repeated. The story of the whaleman's encounter with the mighty prey which he seeks; also his experience in shipwreck; his struggles in the ice floes, where whole fleets have been crushed, are told in a series of illustrations which constitute a part of the loan exhibit from New Bedford. Here we see him engaged in an encounter with a sperm whale, whose mighty fluke sweeps in a great circle, threatening instant death or destruction to anything that it meets. There the whaleman is employed in the arduous duty of "trying-out" among the ice floes of the far north. Despite the hard work of cutting in, trying-out, and cleaning bone, the slipping about on greasy decks, and the unsavory odors from the try works, these occasions are generally the gala days of the whaleman's life, for he has a "share"

in every gallon of oil and every pound of bone that goes into the hold. But when the sun has turned on his southward course, the short Atlantic summer is passed, and gales of autumn come with icy breath, quickly freezing every drop of spray that flies, when "young ice" is forming and the ship is perhaps scudding away to escape the danger of being caught helpless in its grasp, then trying-out becomes a serious and uncomfortable duty that it would be difficult to keep men engaged upon were it not for the personal interest each has in the proceeds. Peculiar emphasis is added to this when we stand on the deck of the whaling bark "Progress"—a veritable old "blubber hunter"—which, after hunting the giants of nature in all seas and under all climes, rests quietly here in the lagoon, completely equipped for an ocean voyage, and one of the most instructive object lessons at the Fair. Her full lines, boats on cranes, try-works and general outfit not only teach us of that great industry which, in former times, built cities along our coast, pushed discovery into unfrequented waters and braved all peril in pursuit of wealth, but we are reminded of the fact that the American flag was first unfurled in a British port from the masthead of an American whaler, and that the noble and daring deeds of the "Nimrods of the sea" who have manned our whaling fleet fill a proud chapter in our national history.

The single exhibit of the Netherlands is a most graphic presentation of the method of fishing for herring in the North sea, and suggests the importance of this fishery to the Dutch, which, some centuries ago, made Holland commercial mistress of the sea. This exhibit consists of a model of a herring logger about ten feet long, riding head to a "choppy" sea, with its main mast lowered, its bowsprit run in, and a small sail set on its jiggermast at the stern. The crew is engaged in taking in nets that are laden with the silvery treasures which have always been so highly prized by the Dutch. One gang of sturdy fishermen are tramping round and round the capstan, heaving in the great warp to which the nets have been bound, and by which the vessel rides. The captain stands at the bow to untie the small lines which attach the nets to the warp, while others pull the net over the side of the vessel. When the

herring season arrives, fleets of these loggers sail out from Dutch ports for the North sea; having reached the fishing ground, gill nets are set as night approaches, a single vessel having out about two miles of netting, stretched along the surface of the sea like a fence, while she rides at the leeward end by a hawser attached to the drifting gear. The nets are usually hauled in the morning.

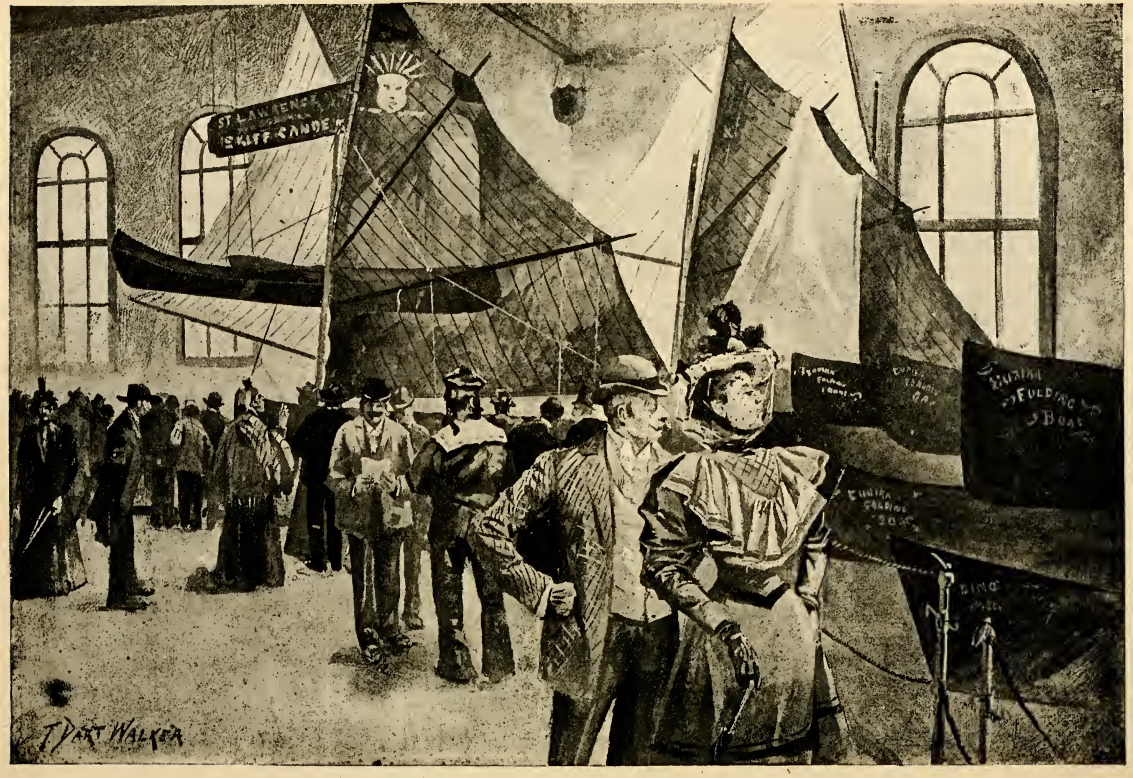
Norway is rich in graphic delineation of her methods of fishery. A collection of large photographs, four or five feet in length, supplemented by the choicest works of art, tell, in a most effective manner, the story of the way in which the descendants of the old Vikings brave the perils of sea in summer's sun or Arctic winter, and draw from the ocean the tribute which constitutes one of their principal commercial products, and has carried the name and fame of Norway to the most distant parts of the earth. Here one sees a fleet of vessels and boats in one of the harbors at Lofoten, the towering, snow-capped mountains around, and the fishermen's huts and flake yards fringing the shore. Another picture shows the boats gathered in fleets on the fishing ground, where they assemble daily to catch the cod that come in countless millions, in winter, into the deep fiords and channels that intersect the coast. Representation is made by model and otherwise of that remarkable whale fishery which, in recent years, has developed along the northern coast of Norway bordering the Arctic ocean. This industry is due to the energy, daring and enterprise of Captain Svend Foyn, who conceived the idea of capturing the finback whale with a bomb harpoon, a device which alone makes possible the successful pursuit of this species. To-day Norway employs a fleet of iron screw steamers in this fishery, ranging in size from thirty to seventy tons. These steamers have a "crow's nest" at the masthead, it being a cask so fitted as to afford shelter for the man who is on the lookout for whales. At the bow and a little abaft of the stem is a mounted gun from which is shot the harpoon that fastens the whale, and carries with it the explosive to destroy the animal. Forward of the gun, at the extreme bow, is an iron bridge, which is so arranged on hinges that it can be turned down in a horizontal or elevated to a vertical position. This bridge is

A NORWEGIAN FISHING FLEET IN HARBOR AT THE LEOPOTEN ISLANDS.
Painting in Norwegian Exhibit.

six feet long fore and aft, and nine feet wide. When a steamer is chasing whales, the bridge is turned down, and about twenty fathoms of whale warp is coiled on it in front of the gun, this amount generally being required to reach the whale when the harpoon is shot into it. A steamer usually carries about 300 fathoms of whale warp, which is of the best Russia hemp; and, ordinarily, this is coiled in the hold. A whale will not always be killed at the first shot, and it sometimes happens that nearly the whole of this warp is run out. At such times the steamer is driven at her full speed—nine to eleven knots—in order that she may keep up with the "fish" as nearly as possible, and also to afford an opportunity to shoot other harpoons into the whale. When a whale has been killed the warp is taken around the steam capstan, and hove in until the "fish" is raised to the bow of the vessel. A heavy chain strap is then passed around the whale's tail, and a hawser is taken from this strap to a rubber accumulator at the mast; this accumulator is used for the purpose of easing the strain on the warp and vessel while the whale is towed to the land. It is said to be impracticable to fasten the warp to the hull of a steamer for the purpose of towing a whale, since in the surge of a sea the rope would break. This fishery, carried on among ice floes of the Northern seas, is filled with incident and not devoid of peril.

Notwithstanding the important improvements which have been made in recent years in some directions, the one thing, which impresses itself upon the mind in studying the details of the methods of fishery, is the fact that in many respects fishing is conducted essentially in the same manner that it was many centuries ago. This is well illustrated by the following graphic description, written more than seventeen hundred years ago by Ossian, who says:

"By those who curious have their Art defin'd,
Four Sorts of Fishers are distinct assign'd.
The first in Hooks delight; here some prepare
The Angle's taper Length, and twisted Hair:
Others the tougher Threads of Flax entwine,
But firmer Hands sustain the Sturdy Line.
A third prevails by more compendious Ways,
While num'rous Hooks one common Line displays.
The next with Nets wide-wasting skim the Seas,



233 SCENE IN FISHERIES BUILDING.—AMONG CANOES IN U. S. SECTION.

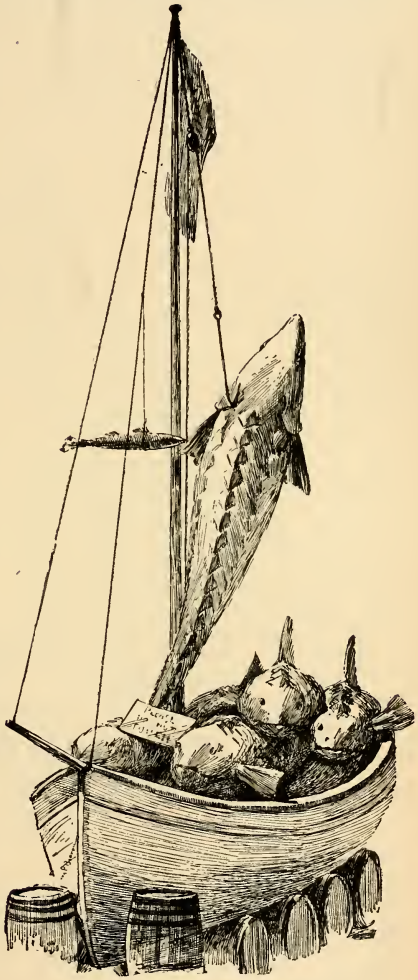
But diff'rent Forms with diff'rent prospects please:
Some hurl the leaded Casting-Net around,
And drag the Circle less'ning from the Ground,
The wide extended Seine and Trammel sweep
The shelving beach, the Drag-Net skims the Deep;
The Hoop-Net's conick Lab'rinth plies the Shore,
Heave-Nets the Fishes' oozy Beds explore.
A thousand Names a Fisher might rehearse
That shun intractable the smoother Verse."

Perhaps the most important part of that section of the exhibit which illustrates the commercial fishing interests is the great collection of products, and the representation by models, and otherwise, of their utilization and preparation. It is not possible to mention these in detail. Suffice it to say that there have been gathered samples of those treasures which are sought in every sea, lake and river, and the proper utilization of which, in many instances, has taxed to the utmost the inventive ingenuity of mankind. Fish dried, salted, smoked, tinned, or otherwise prepared for food, appear in every form and in countless variety. The stockfish of Norway, the Dutch herring, and the edible seaweed and holothurians from Japan, and canned salmon of the Pacific coast of America, the dried and boneless cod of New England and Canada and the pearl shells of Mexico and New South Wales are all here in friendly rivalry with each other. Here also may be found great slabs of whalebone, which, in recent years, has become so costly; skins of fur-bearing animals; rich quilts made of eider down; and wonderfully beautiful creations from ocean shells and fish scales, made with woman's deft hands. Here, too, we learn of the utilization of fish skins for leather, for the manufacture of the strongest glue known to the world; while oils of many kinds, used as medicine or employed in the arts and sciences, meet us in every turn.

Innumerable are the uses of fish and other aquatic products. Not only do they serve an important purpose as food, but it is a product of the whale fishery—ambergris—that alone makes possible the most delicate perfumes on a lady's dressing-case; the costly pearls and gleaming coral that encircle her snowy throat or arms come from the sea. Even the richest furs that cover her; the wonderful tortoise-shell comb that holds in confinement her wealth of

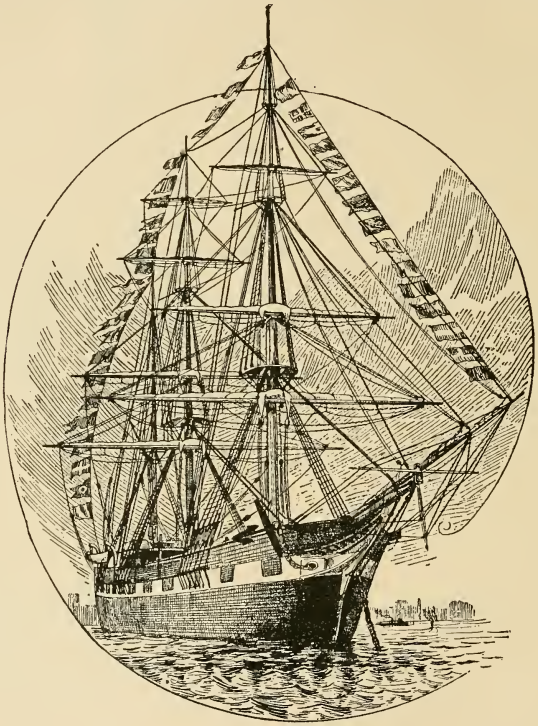
hair; the beautiful cameo on her bosom; the ivory ornaments that grace her home, and many other things are products drawn from the store houses of the deep by the fisherman's skill and patience.

Passing through the colonnaded arcade, we enter the western pavilion, similar in form and construction, as far as outward appearance is concerned, to the aquarial building. Two magnificent live fish and fish cultural exhibits from Pennsylvania and Wisconsin, respectively, stand side by side, occupying about one-third of the floor area. In method of installation these exhibits differ materially, but each is beautiful and attractive in its way. In a series of tanks, varying in length from four to six feet, are exhibits of game fishes, artificially bred and raised. Trout of many varieties, from four weeks to five years old, are here in great profusion. Magnificent specimens are some of these, and probably never before in the world's history has one been able to see such a collection of spotted beauties, running up to eight



STURGEON—FROM NEW YORK EXHIBIT.

or ten pounds! They emphasize most forcibly the great work which has been accomplished by the State Fish Commissions in filling the streams and other waters which have become depopulated by over fishing or pollution. Black bass, white fish, lake herring, lake trout, sturgeon, calico bass, pike, muscalonge and



THE WHALER PROGRESS.

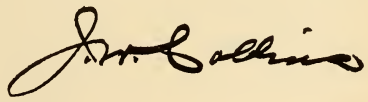
many other varieties are here. Models and photographs of fish hatcheries; a model fish-ladder in actual operation in a miniature stream; colored pictures of fish and fishing make up an exhibit which is not only attractive but of great educational value, viewed

either from the standpoint of natural history, aquarial possibilities, or the benefits to be derived from the artificial propagation of fish.

Near by are exhibits of all the paraphernalia of the angler's art. Rods, reels, hooks, lines, flies, etc., crowd each other on every side.

The manufacture of silk and cotton lines goes on before our eyes, while the skilful hands of young girls fashion and tie the flies, to beguile from stream or lake those prizes which the angler seeks. Near by also are fishing boats of many kinds, together with paintings and casts of fish; exhibits of the literature of fishing, trophies, and even a collection of old reels, tracing their development from early in this century. The disciple of Izaak Walton may well love to linger here, for on one side is a collection of tackle to attract his interest, and on the other a show of living fish, which cannot but remind him of happy days spent by brooksides or on lake, which have left with him some of the most pleasant memories of his life.

Associated with this department, as one of its exhibits, is a reproduction of the fishing house of Izaak Walton, which stands in a beautiful grove beside the lagoon, a short distance from the Fisheries Building. The fact that the 300th anniversary of the birth of "ye gentle angler" occurs on August 9th of the present year gives to this little house a particular significance, and will undoubtedly make it a shrine for the gathering of anglers from all the countries on the globe.



Mines and Mining Building

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By FREDK. J. V. SKIFF,
Chief of Department.

THE human race has delved in the bowels of the earth for six thousand years to find its metals. For ten centuries expositions have been a part of the history of mankind. Yet during all that long period the World's Columbian Exposition is the first to recognize in any conspicuous manner the marvellous development of the two allied industries, mining and metallurgy, or the fact that they are fundamental to a thousand and one ramifying useful arts and the mainspring of material progress. The designers of the Fair, as if to atone in some measure for this tardy acknowledgment, have conferred upon the mining and metallurgical exhibit the choicest of locations, and erected a building that for exposition purposes cannot be surpassed.

Its site is between the attractions of the Wooded Isle and surrounding waterways to the north and the stately Grand Plaza to the south. At a distance it appears to form an extensive main wing to the imposing Administration Building, whose dome looms up between it and the "Machinery" wing south. On the east rise the bell towers of its twin building, Electricity, while on the west its rich but simple tint is set in high relief by the effusive and brilliant mural decorations of the Transportation Building.

The building is in itself one of the most interesting architectural

exhibits of all the Exposition palaces. Its general style is that of the Italian Renaissance. The fronting façades are massive and commanding. A central arch ninety feet high forms the main entrance. This connects with the domed pavilions at the corners by a series of intervening bays, permitting of a loggia below, and, on the gallery floor, of a deeply recessed promenade that opens out upon charming landscapes far and near. A profusion of sculpture, architectural relievos, flagstaffs and banners give the exterior an animation appropriate to the festal occasion, while the ornamentation is suggestive of the varied and brilliant exhibits arrayed within.

MINER—ENTRANCE TO MINES BUILDING.
(*R. W. Bock.*)

Beneath the word MINING over the lofty arched portal are colossal half-reclining female figures holding aloft typical miner's lamps, while bas-reliefs of rugged miners with pick and pan in hand symbolize that all the opulence of metals and gems displayed within are to be won by sturdy toil.

Entering the building, the visitor finds a capacious hall 700 feet long and 350 feet wide, covering over five and a half acres, or 345,000 square feet. The entire expanse of roof, which is mostly glass, is so suspended as to leave the central portion clear and unobstructed, the sole support being

two rows at the side of huge steel cantilever trusses. This is the first example of the successful application of the cantilever system to roofs, and may be said to mark an era in roof construction. A half million pounds of steel were required for this work. A spacious gallery sixty feet wide extends entirely around the building, greatly increasing the total available floor space. Illumination is provided by extensive glazed roof sections, and at night by a full

VIEW IN MINING BUILDING—SOUTH END. SHOWING PA. COAL SHAFT ON LEFT.

complement of arc and incandescent lights. Every form of power, steam, electric and compressed air, is distributed at convenient points.

At first glance the marvellous exhibits spread upon the floor are both bewildering and fascinating. Booths and pavilions, obelisks and trophies, shields, bunting and flags, all appear in a profusion that captivates and at the same time invites the curious to closer investigation and study. Looking down the avenues of this small

city of exhibits the eye is arrested by a number of lofty trophies in metals, and at the centre of the building stands a needle of anthracite coal. In various localities are lesser pyramids and obelisks of mineral that glisten in the sunlight. Flags and other decorations give a lightness and gayety to the scene that relieves and sets off the solidity of the materials displayed. These avenues followed to the centre are seen to mark by their intersection with cross transepts four grand divisions, constituting the middle portion of the building. Lesser areas occupy the space just beneath the galleries. Over the territory west of Bullion Boulevard, the main central avenue, float the colors of many foreign nations—France, New South Wales, Canada, Great Britain, Germany, Mexico, Japan, Spain, and others. To the east of the same avenue the sisterhood of the States vie with each other in the beauty of their pavilions and in the elegance with which they have installed the exhibits. From the east side of the building comes the whirl of moving wheels and the clinking of chains, indicating an operating exhibit of mining machinery.

Reserving the gallery exhibits for a later visit, let us now saunter down the Bullion Boulevard on a voyage of discovery, and, Columbus-like, explore for the treasures that stock the world's coffers. A lofty silvered shaft some thirty feet high, surmounted by a stooping Atlas bearing the glistening world upon his shoulders, is the first to meet our eye's fancy. It is a trophy from New South Wales, and represents about the actual yearly output of one of the most celebrated silver mines of Australia. Pyramids of copper ingots encircled with hoops of burnished copper; stacks of white ingots of tin adorned with metal streamers and rosettes; and trophies in square cakes of the "Star" pure antimony, form the unique and façade of this handsome exhibit. Immediately in the rear is arranged the collection of gold nuggets, crystallized gold and gem stones. Mounted on handsome blue plush shelves, and protected with large glass frame, is the big mass of gold called the "Maitland Bar" nugget, containing 313 ounces of fine gold, and valued at $6,000. The entire collection of gemstones, such as diamonds, sapphires, emeralds, opals, amethysts, garnets, topaz,

etc.; the series of silver and silver ores; pyramids of lead, tin, and antimony ores; highly polished purple, red and black marbles, and columns and arches of coals and kerosene shales, give some idea of the variety and extent of the colony's resources, and afford a display that is conceded to be one of the finest in the Mining Building.

EXHIBIT OF NEW SOUTH WALES.

The adjoining exhibit on the south is that of Canada. Nearly all of her provinces have taken prominent part in the mineral display. Ontario's space is bordered with show stands filled with an array of graded salts and oils in glass jars, mineral waters, gypsums, stone and marbles. A bust of Sir John MacDonald in paraffine wax illustrates one of the products of petroleum. The central feature is the nickel exhibit.

This is built up in the form of a pyramid, at the summit of which rests a huge ingot of nickel containing several thousands of dollars' worth of pure metal. The base is formed of heavy masses of the pyrrhotite ores, in some cases weighing many tons, while in the surrounding cases are arranged the products of concentration, refining and manufacture.

In the Quebec section a stack of gold bars is the instructive method employed to present the statistics of gold production from that province. Nova Scotia shows great sheets of mica and masses of serpentine rock in which the streak of fibrous asbestos occurs. The Dominion Geological Survey has a comprehensive display of rocks systematically arranged, as well as a complete series of maps and pictures bringing out the geological history of the country.

Great Britain, occupying a prominent position on the central court, has attempted no particular architectural effects; but the individual exhibitors have, as a rule, enclosing structures of an elaborate nature. The exhibit of platinum and rare metals is made by the largest firm in the world manufacturing these interesting products. The Sheffield steels and Low Moor irons are samples of these celebrated manufactures. A statue of Liberty enlightening the world is carved in pure rock salt, a striking instance of the adaptiveness of a commercial mineral to artistic purposes. A huge block of cannel coal, weighing eleven tons and fourteen hundred weight, and bound with heavy chains, is one of the largest blocks ever mined, and was elevated from a depth of over 1,300 feet. An exhibit of polished porphyry in the form of statues and mosaics is valued at over $12,000.

At the main north entrance France has installed an interesting variety of technical and scientific mining exhibits. Asphalt—its mining and uses—is illustrated by maps and pictures of the asphalt concessions, prominent among them a large oil painting of men at work in the mines, and by sections of pavements, conduits and other applications to building. Masses of nickel ores are brought from New Caledonia, and carbonate of manganese is exhibited by the only mine of that material in the world. The French collieries

(245) EXHIBIT OF ONTARIO.

show by maps, charts and statistics the magnitude of the coal mining industry.

Over there where flies the white flag with the red dot the Department of Mines for Japan has a presentation of the characteristic

VIEW IN NORTH END OF BUILDING.

native minerals and metals. Copper, which is the principal metal, is shown in all grades of purity from the black to the electrolytically refined. Upon the face of each ingot is a stamp of raised Japanese letters, as curious and complicated as a coat-of-arms. Photographic views give one an idea of the leading copper, gold, silver and antimony mines, and show the native method of working and refining these metals. Salts, gypsums, graphites and mineral waters are all put up in packages and forms peculiarly Japanese. The Imperial Geological Survey has placed on exhibition not only an extensive series of geological rocks, but has covered the walls with geological maps framed in bamboo and executed with skill and profi-

ciency that must surprise the occidental scientist. From several reconnoissances made, the areas of the different formations have been delineated with surprising exactness of detail.

Nowhere among all the many imposing and beautiful displays made by Germany is the national character for solidity and strength more impressively brought out than in the Mining Building. The one exhibit that holds the eye from every part of the building, the one that elicits general and hearty admiration, is the magnificent iron and steel trophy exhibit of the Stumm works, second only to Krupp in size. Upon the personal solicitation of his friend, the Emperor, Baron Stumm, with admirable loyalty and at an outlay of nearly $200,000, prepared this imposing exhibit. Iron and steel of every

GERMAN MINING EXHIBIT.

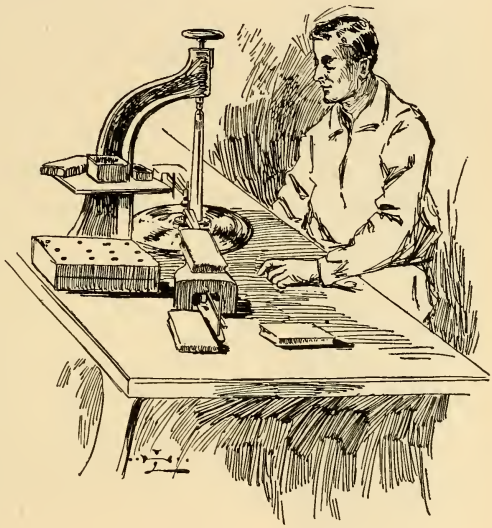
structural shape, beams, girders, bars, rails, pipes, rods, wire and bands are built up to a height of nearly one hundred feet like branching trees, and assume figures as bewildering in ramification as they are graceful in outline. The entrance portal is formed of

split pipes many feet high, with life-sized bronze allegorical figures at the summit, and just beneath the word STUMM in letters of gilded pipe. Entering the space we are confronted by a beautiful ornamental fountain embellished with figures in bronze of metal-workers and metal-working appliances, such as converters and rolls. Palms and other green plants contribute to the attractiveness of this centre piece. Lofty obelisks constructed entirely of polished sections of girders and rails in continually diminishing sizes mark the corners. The background is formed by a solid wall entirely covered with mosaic of polished blast furnace slag. By this means are worked out in fancy letters and border inscriptions the name of the firm, as well as the names of a great variety of products manufactured at its extensive establishment. Complete models of each separate plant and of the numerous hospitals and schools erected by the company are displayed upon the floor.

Among the other mining and metal exhibits made by Germany is a panorama of mountain scenery along the Rhine shown in connection with the exhibit of metal salts by a gold and silver refining company, whose works are located in the midst of this inspiring landscape. In the gallery just in the rear of the main German section the great mining academies and governmental mining bureaus demonstrate the great advancement made by Germany, the classic land of mining, in the technical sciences and arts connected with mining and metallurgy. Geognostical maps and charts showing minutely every feature of landscape geology, as well as the distribution of mines and mining establishments, cover the walls. In addition to this are models exhibiting the methods of coal mining and of the apparatus used for hoisting, drainage and ventilation; models for the principal types of furnaces for the reduction of gold, silver, iron, lead and copper, with interesting collections of samples illustrating their metallurgy; also many series of the salt and oil products and by-products. The display of ambers from the Koenigsberg district is probably the most comprehensive exhibit of this kind ever made. It includes every variety from the irregular-shaped masses of crude material up to polished specimens of transparent amber. A collection of "inclusions" illustrates the manner

in which insects sticking in the soft gum are imbedded and finally fossilized with the hardening of the amber.

Brazil, occupying a position just south of Germany, has a museum of minerals and gems from the banks of the Amazon and the flanks of the Andes. The grades and varieties of her celebrated diamonds are brought into quick comparison with the similar exhibit next door made by the famous Kimberley mines of South Africa. The Cape Colony commissioners, under whose supervision this display was made here and at the Paris Exposition of 1889, recognizing what a great attraction it has always proven to the public, decided to show at Chicago every step and detail in the process of digging and preparing diamonds for the market. One sees the hard blue unattractive diamond-bearing rock go into huge pulverizers, then into sorting screens, which turn out smooth, shiny pebbles ready for the lapidist. He deftly and quickly gives them a touch here and there with his rapidly revolving wheel until they sparkle in the sunlight and emerge a finished gem.



POLISHING DIAMONDS.

The rich mineral belts of the Mexican table lands and mountains are to be found near the main south entrance to the building. Here a great cabinet collection of minerals, shown in elaborate bronze and glass cases, represents the combined contributions of a dozen wealthy provinces, while native mining machinery, both

WISCONSIN MONOLITH.

ancient and modern, is on exhibition in different sections of the court.

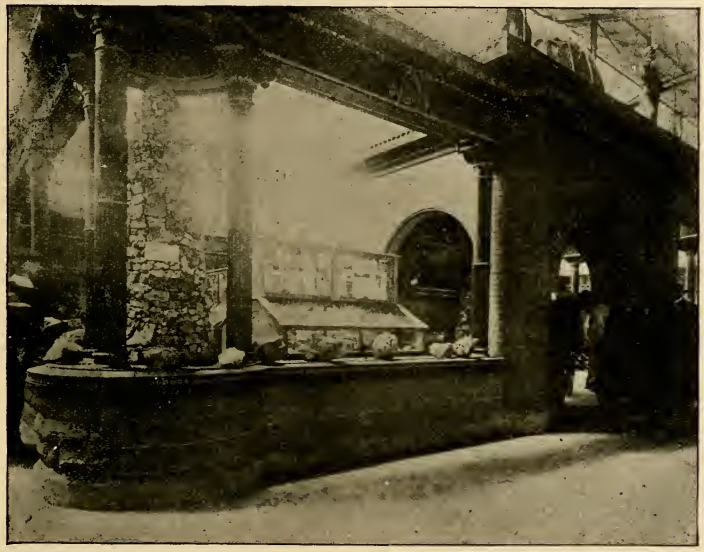
The land of the Czars occupies a space beneath the gallery, and is represented chiefly by the irons and steels for which it is so celebrated. Whole pictures in uniquely arranged polished sections of these metals adorn the walls. A trophy at the main west entrance affords some conception of its products in mineral and metal.

Spain, that, besides a new world, has bequeathed so many of the arts of mining and metallurgy, has an extensive series of geological maps and large collection of economic minerals. The famous Rio Tinta copper mines and other great mineral districts of the Pyrenees show a diversity of ores. Austria has exhibits of excellent crucible steel and a panorama of the famous Carlsbad mineral water springs. Italy carries off honors with the sulphurs of Sicily and the fine statuary marbles from Carrara.

The South American States, those lands that for so many centuries were the cynosures of the adventurer for gold, demonstrate that their treasure vaults are not yet exhausted, and fittingly complete the great mineral exhibit of the foreign countries.

No city avenue ever presented a more festive and at the same time substantial array of architectural fronts than those on Bullion Boulevard illuminated by the western sun and adorned with the coats-of-arms of the States.

The great mineral-producing commonwealths have come out for a carnival, and have called in to assist in their entertainment the stonemason and bricklayer, the cutter and polisher, the decorator and the architect. As a result a solid front of architectural beauty, ever varying from pillar to classic temple, from parapet to monolith, vestibules, arches and turretted battlements, make a line of miniature palaces that afford a fitting retreat and appropriate resi-



WASHINGTON EXHIBIT.

dence for the exalted sisterhood of States. Every bit of material in its position is pregnant with meaning, every stone and piece of clay has a significance attached to it by virtue of its position. These massive monoliths that mark the four corners of the Wisconsin space are more than sandstone. They are representatives of the great areas of sandstone that form a fringe around the great solid central core of the State—the Isle of Wisconsin. This arch of cannel coal forming the façade of Kentucky has added to it a

story of production and use. That tessellated floor of Pennsylvania is more than a tile floor. In a fascinating way it tells the variety of clays derived from the subsoils of the Keystone State and the skill of the potter's art. In this way have monotonous piles of stone, ore, sands or clay been transformed into shapes that at once

PENNSYLVANIA SECTION.

intensify their beauty and show their adaptability to the uses and tastes of mankind. These façades are many of them worthy of more than passing notice, and can profitably be studied for their own sake, especially those of Colorado, South Dakota, Wisconsin, Minnesota, Washington and Ohio.

If we carefully examine the material exhibited in these pavilions, we find that the States have been grouped according to the character of their predominant mineral products. Thus all of the precious metal States, such as Montana, Idaho, Colorado and Utah, are at one end—the south—while the States yielding commercial minerals, such as clays, cement, stone, keep the balance at the other end. Pennsylvania ranks first in the list of mineral producers, and

has exhibits in petroleum, coal and iron. A complete working model of a coal mine and breaker shows the manner in which the coal is brought out on cars from the mine mouth, dumped and sorted. In front of the New York structure has been erected a geological obelisk giving a lesson on the structural geology of the State. Kentucky has a skylight of transparencies of mining scenes, and beneath her floor conducts the visitor into a chamber reproduced from the Mammoth Cave. Ohio elicits universal admiration for her beautiful façade of many-colored burnt, unburnt and glazed brick, with freestone copings and bays. Within are carried on the operations of evaporating salt and preparing it for

OHIO EXHIBIT.

the market. Michigan, at the central court, has, through the liberality of many prominent citizens, erected a triumphal arch of red sandstone, surmounted with bronze figures of minerals. Over her low parapet are to be seen four obelisks of pure copper, ranging in weight from 50 to 500 pounds—massive copper in bars, rods,

sheets, burnished sheets, wire and masses of native copper weighing many tons, and just as found in the great Lake Superior copper mines. Across the aisle the two largest lead and zinc States of the country—Missouri and Wisconsin—tenant pavilions of handsome design, and are brilliant with crystals of calcite and shining cubes of lead. Under the central pagoda of Wisconsin, cushioned in soft mountings of plush, is a collection of pearls from Wisconsin rivers valued at several hundred thousands of dollars.

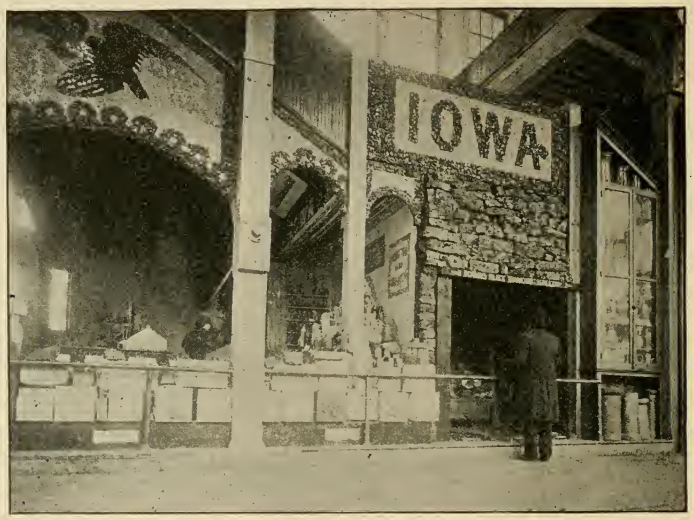
MICHIGAN SECTION.

Of course the centre of attraction among all of the precious metal States is the world-renowned Rehan statue in the Montana section. Here the treasure State of our country, the Mountain Queen, has symbolized her material wealth in terms of artistic beauty. The subject of the statue is Justice, the figure holding in her one hand a pair of scales, in the other a silver sword. The value of the silver poured into the moulds was estimated at $61,800; the gold used for the plinth base at $230,000; while the cost of sculpture

and founding brings up the total value to over $300,000. The exhibit of the Montana copper companies is in itself well worthy of attention. The mineral exhibit of Utah is exceptionally fine, and includes gold, silver, lead, copper, zinc, antimony, bismuth, tellurium and quicksilver ores, with a list of gems showing topaz, garnets, opals, malachite, onyx, agates and crystal quartz. The collective display of California is entered through a triumphal arch faced with marbles of different varieties from the quarries of the State. The great seal of the State is the most conspicuous object in the immediate foreground, and the rear wall is adorned with an oil painting of the first discoverer of gold in California, Marshall. The Arizona and New Mexico exhibits are in the same relation they sustain to each other territorially. Arizona revels in copper and copper ores. A huge oblong block of beautiful azurite with streaks of malachite, just as taken from the mines of the Copper Queen Consolidated Company, forms a centre piece. At the base are cases filled with a great variety of copper combinations, carbonates, oxides, and copper mixed with gold and silver. The contrast in colors forms one of the richest effects imaginable.

MONTANA SILVER STATUE.

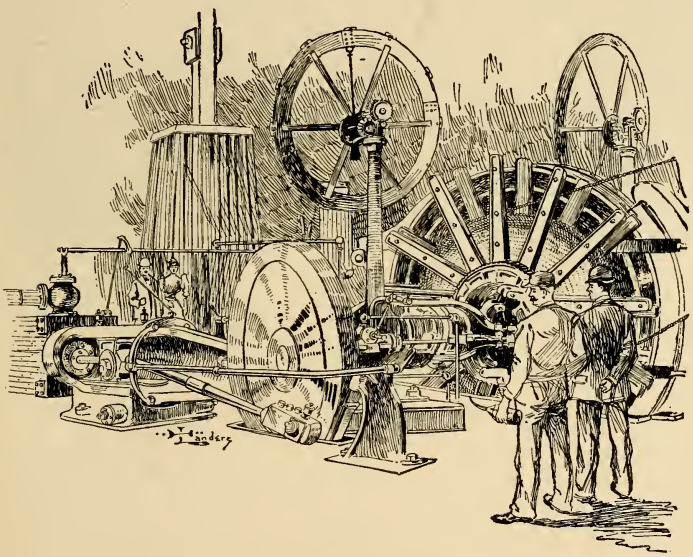
The petrified wood exhibit from this State is also exceptionally fine. A miner's cabin in the centre of the New Mexico space, built of varied minerals, calls to imagination the wild scenery of mountain and canyon of this far western country, and is suggestive of



IOWA EXHIBIT.

its abundant underground wealth. A circle of marble columns of native material adorns the Colorado space, and the low parapet is faced with new light-colored varieties of Colorado onyx. The Breckenbridge collection of gold nuggets and free gold is valued at a quarter of a million dollars. The different counties of the State have each contributed cabinet collections, so that one may easily learn the geographical distribution of Colorado minerals. North Carolina is another gold and gem producer, and consequently her space luxuriates in jewels and a thousand and one rare and decorative minerals. West Virginia, Kansas, Indiana, Oregon, Virginia, New Jersey, Minnesota, Washington, Wyoming, Tennessee and Louisiana also have representative displays on the ground floor.

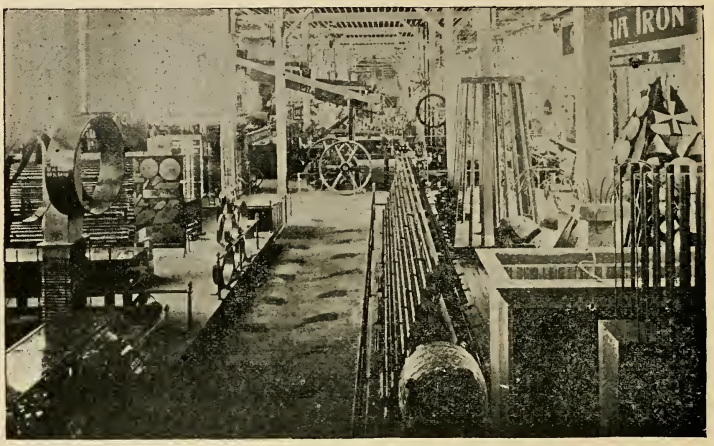
A trophy in copper, copper alloy, nickel and steel furnishes a variegated effect in colors at the main east entrance. Hard by are the heavy exhibits of the great iron and steel firms, one showing the first steel converter used by the inventor of the so-called Bessemer process—Kelly, and an object of great interest from a historical and evolutionary standpoint. In size, as compared with the enormous converter, it is as the baby elephant to the Jumbo. The whiz and the thud of drills, hoisting engines, concentrators, etc., attract our attention, and rapidly we pass through the aisles between the rows of giant mechanisms that can drill through and cut



DOUBLE REEL HOISTING ENGINE—UNITED STATES SECTION.

out the most solid quartz, lift it by the tons to the surface, crush it to powder, and by dozens of ingenious mechanical and chemical processes separate the valuable metal ingredients. Here is a huge furnace for the smelting and refining of bullion; over there powerful pumps and fans for ventilating and draining mines, while a

tunnel running beneath the building at the south end is an actual representation of a mine gallery, and shows the method of timbering, lighting and underground haulage. This tunnel, by means of a wire rope tramway, connects with the ore yard, from whence the



MACHINERY EXHIBIT.

ore used by the machines for demonstration purposes is conveyed to the space where it is to be utilized in the building.

Perhaps the most striking display in the gallery is that of the Standard Oil Company, the entire north gallery being given up to its display of the crude and graded oils and manufactured by-products, such as wax flowers; models illustrating the methods of drilling, for piping, storing and distributing the oils; also geological models showing the relative position of the oil-bearing strata. In a series of industrial courts running the entire length of the east gallery are assembled mineral materials of the industries, separated according to groups of the classification and along lines of affinity. From Group 48 to Group 42 one passes through a continual transformation scene; the sulphurs, pigments and chemical salts at the one end giving place to the black pitches of the asphalt of Trinidad, succeeded by exhibits of graphite in leads, crucibles and clays,

and the whole series of abrasives from grindstones to ladies' rouge, building and ornamental stone, coals, cokes and mineral combustibles. This material is shown and arranged with all the skill and interest of competing firms and individual effort.

In building stone and coal a departure is to be noted. A cube exhibit of the products of the quarries has been presented by the management of the Mining Department itself, and in the place of huge blocks of coal from one or two mines, specimens of uniform size have been solicited from every coal miner in the country.

VIEW ON WEST SIDE.

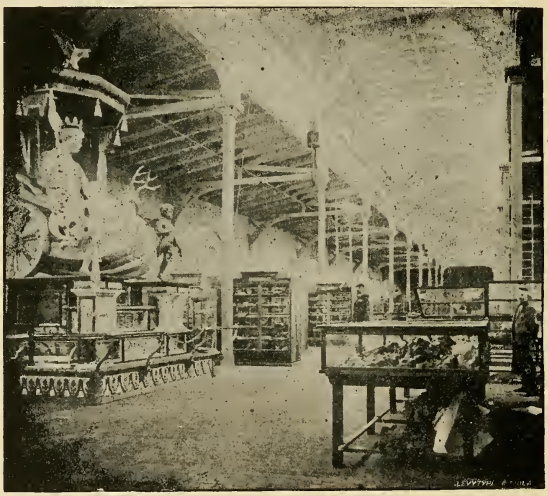
These dressed specimens have been placed upon aluminum mounts, giving the analysis, locality and other valuable information, while a large plate glass map upon the floor in the midst of the collection shows the distribution of the coal areas, and, by numbered cross reference, the source of the specimens.

An operating departmental laboratory, a mechanical testing laboratory, and a chemical assay exhibit are open to the inspection of the public at the southwest corner. A mining library, filled with books rare and ancient, as well as modern, is at the disposal of the public, and a reading-room is provided where they may sit and

pursue the information of the past and present on matters relating to mining and metallurgy. Near at hand the Mining Engineers have their headquarters.

In the metallurgical division complete collections in each metal bring out the metallurgy from the ore up to the finished product. In the mineralogical division many large dealers, as well as private collectors, have case after case filled with articles of great intrinsic value and of extraordinary interest to the scientist and general public.

It would, of course, be well-nigh impossible to give a complete picture of this great exhibit. The extent of detail is too vast. The



MINERAL SECTION.

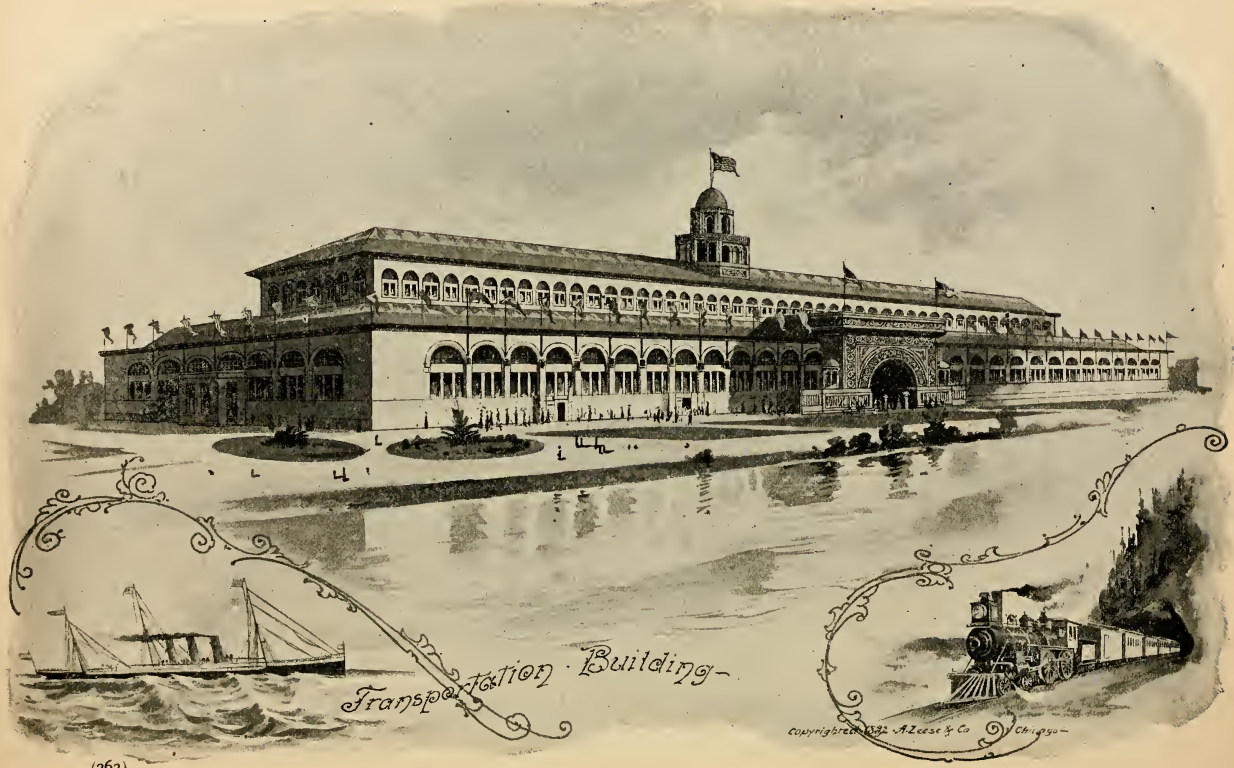
visitor will with difficulty be able to see the majority of them, and from previous exposition experience will learn to select that for which he has a natural affinity or that which falls in with his line of work and education.

The commercial man, the practical miner and inventor will consider the exhibit as more than a huge advertising agency, evanescent

in influence as a soap bubble. It inventories the progress made in the mining and metallurgical industries up to the present time; it indicates adaptability to present needs, and it utilizes the gains of the past and will stimulate and guide future investigation and effort. The scientist finds complete and classified specimens to aid him in his studies of mineralogy, geology and other sciences; a compendious text-book illustrated by concrete examples, charts, models, maps and schemes. Exploring for beauty, the artist discovers beauty of form in the accuracy of shape and fineness of structure of a dainty crystal or monumental prism; beauty of color in the prismatic hues and iridescent shades and tints of minerals. He here finds in variety and abundance the materials that make his paints and the block which his genius can carve into graceful and plastic forms.

But there are other lessons to be gained from the display, leaving the specialties and judging it from a higher plane and with broader and more fundamental standards. A study of the installation from the geographical and statistical standpoint reveals many interesting facts of economic as well as of national importance. It tells how in the formation of the successive envelopes of the earth's crust a beneficent providence has placed mineral materials in such variety or quantity as delicately adjusts them to the wants of a progressive civilization. It tells the story of how this or that region of country has become prosperous by the opening up of new and inexhaustible stores of fuel or metal, or how the introduction of a new process has been the magic touch of Midas to a languishing industry.

But the full significance conveyed by this exhibit is that of a tribute and exemplar of human industry offered by the unseen thousands who toil in silence for the comfort and welfare of all. The greatest achievement of this display will be to emancipate the labor that toils in the perilous surroundings of mine or mill, bringing to its assistance the improved steam and electrical mechanism here exhibited. In quickening the material development and prosperity of the countries taking part in the exposition, the mining and metallurgical exhibit will be a forceful factor; as a promoter of civilization its influence will become a permanent endowment to mankind.


Transportation Building.
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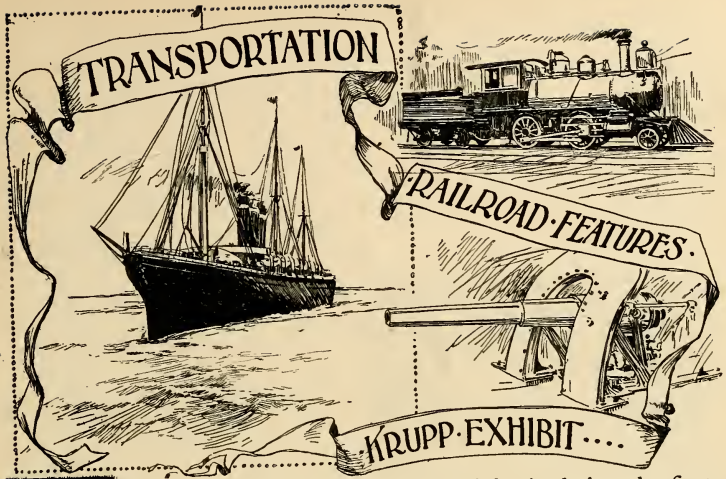
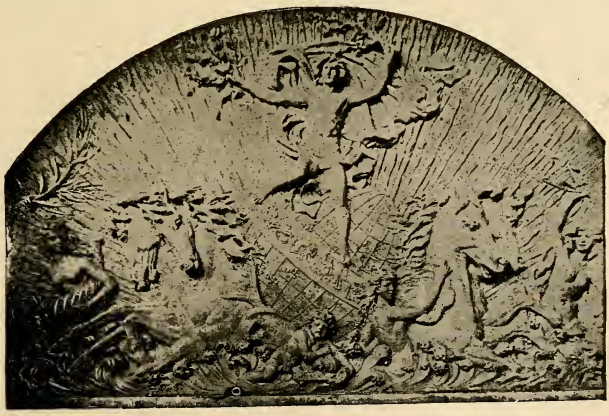


THIS World's Exposition is noted for its being the first appearance of many of the most important features of progress. One of these is the great building and department devoted to the exploitation of the history of transportation. Seventeen acres of Exhibition space for this subject are provided in a building and annex. The building rises



APOTHEOSIS OF TRANSPORTATION, TRANSPORTATION BUILDING.
(*John J. Boyle.*)

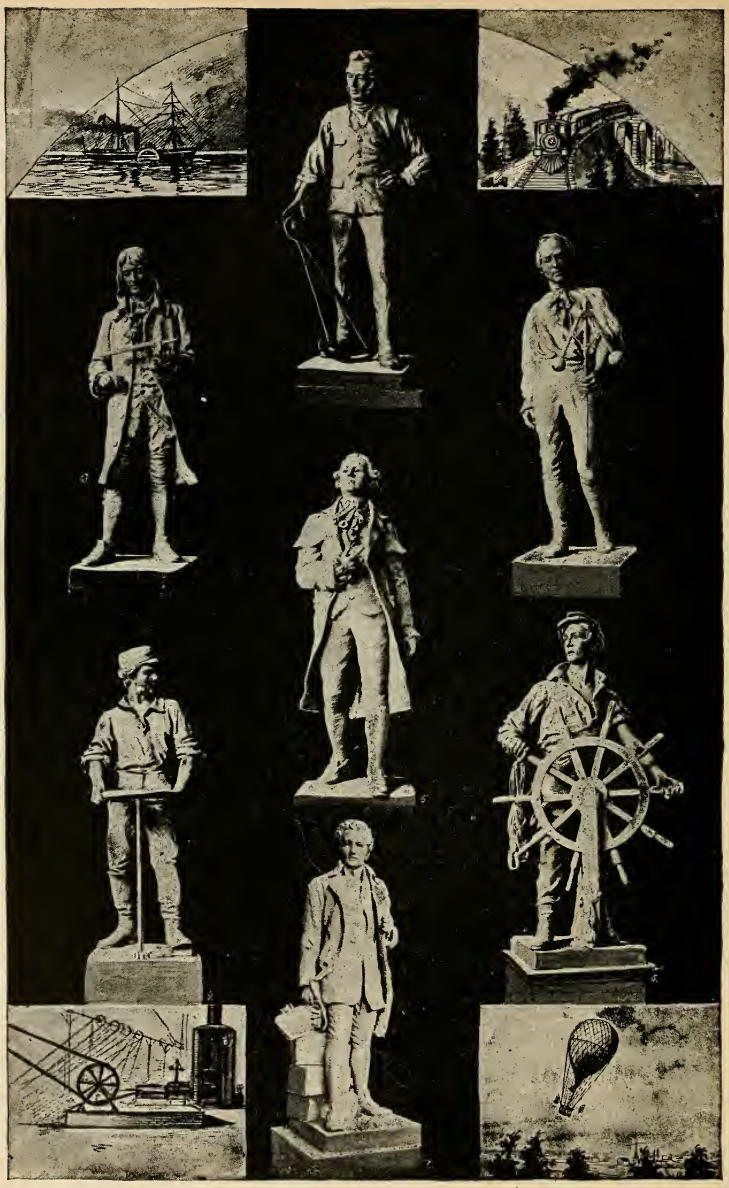
on the western bank of the main lagoon, nearly in the centre of the grounds, half overlapping the Building for Mines and Mining, and looking across the water to the Building for Manufactures. It is directly south of the Horticultural Building. In general the architectural features of the building are very simple, but its details and accessories are rich. At the centre it is surmounted by a cupola 165 feet high, which affords an extensive view of grounds, Lake and surrounding country. This point of observation is reached by eight elevators, which run for public use, and properly form a part of the transportation exhibit. This is the only department building thus provided. The main entrance to the building consists of an immense arch decorated with carvings, bas-reliefs and mural paintings. It is treated entirely in gold, silver and bronze leaf, and is known as the golden door. On one side of the arch appears in panel an original study in ancient transportation, and on the opposite side the palatial accessories of modern railway travel. The corners above the arch are decorated with mural paintings of marine and railway scenes. Four minor entrances on this front and other elaborate portals at either end of the main building are adorned with fountains, and some twenty life-size statues of inventors, whose history is identified with that of the science of transportation.

DECORATION OF TRANSPORTATION BUILDING.

The interior of the building is treated much after the manner of a Roman basilica, with broad nave and aisles. The middle roof

rises much higher than the others, and its walls are partly open so as to form an arcaded clere-story. The dimensions of the building are 256 x 960 feet, and of the Annex 425 x 900 feet. The total cost was nearly $400,000. It is said that every method of transportation that history records except the back of a mule and the foot of man is exemplified in this building, and the chief of the department, Willard A. Smith, is fond of saying that his building contains everything, from a toy tin wagon to a mogul locomotive, and from a two-log raft to the model of an Atlantic liner. The development of modern transportation has been so recent and so rapid that its significance has been hardly understood. Already its early history is in many instances fading away or utterly lost. From the beginning it was the intention of this department that it should fully and fairly present the origin, growth and development of the various methods of transportation used in all ages and in all parts of the world. The classification may seem to include some things which it is difficult to show in an Exhibition of this kind, but the object kept in view has been to make so complete the demonstration of the method and means employed in every branch of the business of transportation that the earnest student of science may here find everything at his hand

LOCOMOTIVE, FACADE, TRANSPORTATION BLDG. (*John J. Boyle.*)

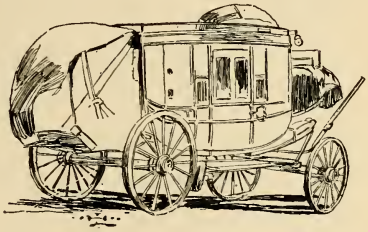


FIGURES ON TRANSPORTATION BUILDING. (*John J. Boyle, Sculp.*)

1. George Stephenson.
2. Dennis Papin.
3. James Watt.
4. The Brakesman.
5. Joseph Michael Montgolfier.
6. The Pilot.
7. Robert Fulton.

without encountering the difficulties which now beset and environ such study and investigation. The result is a grand object-lesson presented so clearly and impressively that one may learn in hours and days what would otherwise require months and years. It was the aim of the department to keep the historical feature clearly in view and even to magnify it. By so doing the great exhibition of the actual means of transportation employed throughout the world to-day and the wonderful achievements of recent years stand out in high relief by contrast.

The first and most noticeable, and not the least interesting, feature of the Transportation Building, is the beautiful scheme of polychrome decoration which is applied to its exterior. To treat the building externally in many colors was the original thought of the architects in the conception of the design. The architecture, therefore, was carefully prepared throughout with reference to the ultimate application of colors, and many large plain surfaces were left to receive the final polychrome treatment. The ornamental designs for this work are of great and intricate delicacy. The colors themselves comprise nearly the whole galaxy, there being not less than thirty different shades employed. These, however, are so delicately and softly blended, and so nicely balanced against each other, that the final effect suggests not so many colors as a single beautiful painting. The general scheme of color treatment starts with a light tone for the base of the building. This is kept entirely simple and free from ornament in order to serve as a base for the more elaborate work above. The culmination of high color effect is found in the spandrels between the main arches. Here the work is carried to a high pitch of intensity of color, and reliance is placed on the main corner of the building, which is very simply treated, to act as a balancing and quieting effect in the general composi-



OLD TIME ROCKY MOUNTAIN STAGE COACH —BUILT IN 1868.

tion. In the centre of the spandrels is placed a beautiful winged figure, representing the spirit of transportation. This figure is painted in light colors with a background of gold leaves. It is this elaborate color scene which culminates in the golden door.

At the entrance to the south door of the Transportation Building stand, on the right, statues of Stephenson, Barrett, Scott and the figure of a pilot, the latter typical of water transportation. On the left are statues of Montgolfier, Vanderbilt, Watt, and a brakeman, the latter typical of land transportation. These figures are duplicated at various points in the circuit of the building.

The classification of the Department of Transportation includes

EXHIBIT OF THOS. COOK & SON.

the following groups: Railways, railway plants and equipment: Street car and other street-line systems: Miscellaneous and special railways: Vehicles and methods of transportation on common roads: Aerial, pneumatic and other forms of transportation: Vessels, boats, marine, lake and river transportation: Naval warfare and coast defence.

The displays in this building seem to come closer to the interests of every one than do most of the others, and the greatest crowd is usually found herein. Entering at the south doorway of the main portion of the building one reaches first the German section. It

occupies this entire end and part of the annex. Its decorative exhibits are very fine. The particular features consist of two large locomotives, all kinds of cars, including a Red Cross ambulance train, interlocking switch system, etc. Certain exhibits of the United States come next, although our own country occupies such a great portion of the building that its displays may be said to be everywhere. On the right side of the main aisle is the exhibit of the International Navigation Company, including a fine display of models of ocean steamers, and a full size section of one of their

HARNESS EXHIBIT.

ocean liners. This is the celebrated Inman Line so well known in ocean navigation.

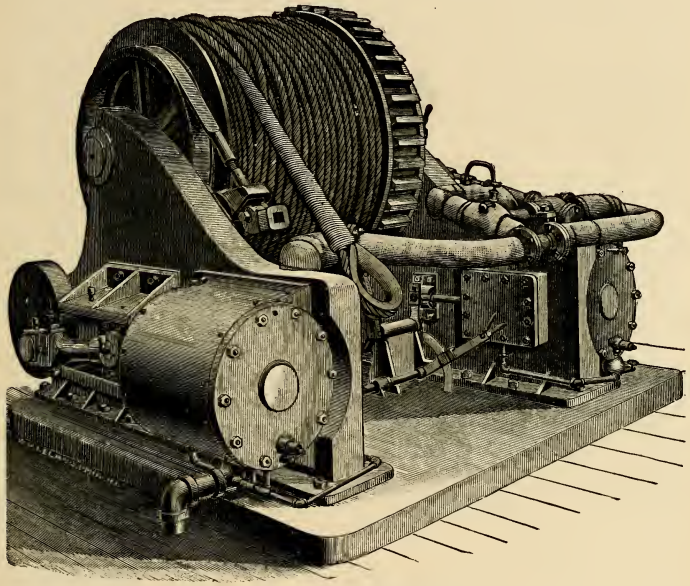
This full-sized section of one of the new American Line steamers now being built by the William Cramp & Sons' Ship and Engine Building Company at Philadelphia is over seventy feet long and thirty-five feet wide, or a little more than half the beam and one-seventh the length of the ship itself. This is such a novel display, and of so much interest to the multitudes of our people who have had no opportunity to visit such a ship afloat, that it is worthy of

extended description. The floor line of the building comes just where the twenty-six foot water line of the ship would be, so there is as much of it above the floor as there will be above the water at her draft on sailing. Therefore if a complete section of the ship were shown it would have to go down into the ground twenty-six feet, or make the top of the funnel twenty-six feet higher. As it is now, the first or promenade deck is more than twenty-five feet above the floor, and the top of the funnel is yet fifty-three feet above this. This serves to give some idea of the actual height of these great trans-atlantic liners. As one approaches the vessel the black iron sides of the ship are seen, studded with port-holes, extending along the aisle and rising to a height of seventeen feet above the floor, where the plating ends and the railing on the second or saloon deck commences. Above this is the first or promenade deck, and yet above rises the bridge from which the officers direct the course of the vessel. Just aft of the bridge and on top of the deck-house is a life-boat ready for launching.

VIKING SHIP.

Passing around the end of the exhibit it can be plainly seen that

it is only a section of the ship, as the ends are cut off square and left open, so that all four decks, and to some extent what is on each one, are visible. The visitor passing through this exhibit will see the model-room, steerage compartment, first-class compartment, second-class compartment, dining-saloon, promenade deck, library and smoking-room. The visitor can thus obtain a perfect idea of the size, furnishings and style of the ocean liners.

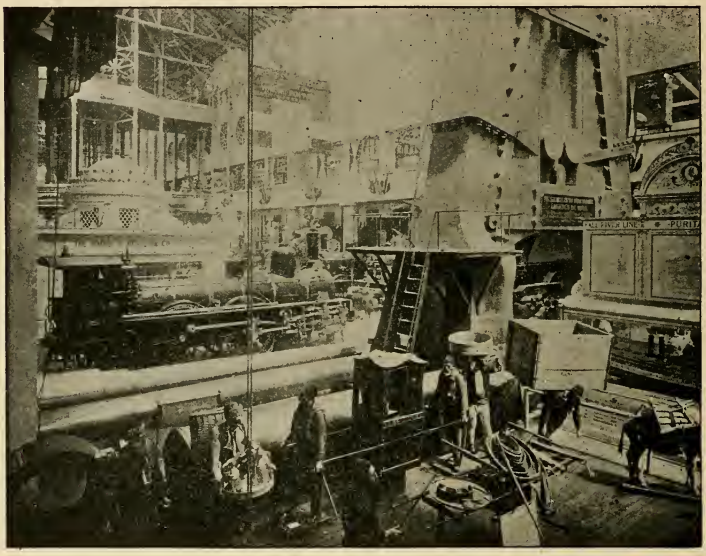


STEAM TOWING MACHINE.
Exhibit of American Ship Windlass Co.

The American Ship Windlass Co., of Providence, R. I., shows windlasses and capstans in great variety. The Harland & Hollingsworth Company exhibits a collection of gas engines, naphtha launches, etc., and adjoining this is the display of Thos. Kane & Co., of Chicago, with a similar field. On the right again is found the Austrian display, consisting chiefly of saddlery and carriages,

but also showing the zone system peculiar to the railway management of that country. On the opposite side is the display of Japan, showing models of their modern war ships, and in contrast the junks that they used in ancient times. Turkey adjoins Japan with an entertaining display.

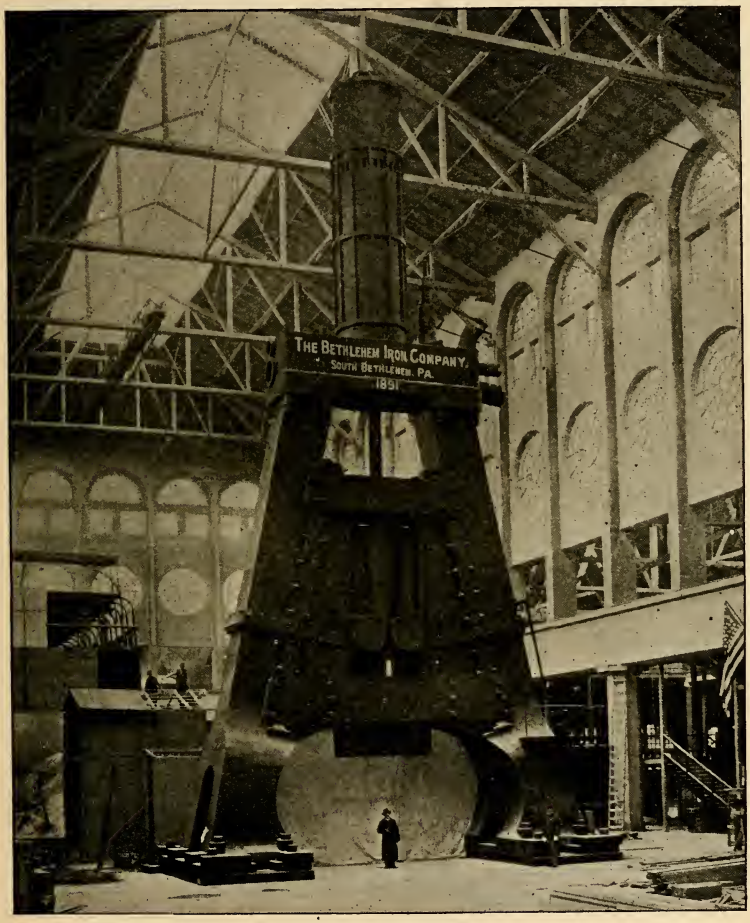
The sight-seer has now reached the striking exhibit of the Beth-



TURKISH TRANSPORTATION EXHIBIT.

lehem Iron Company. These famous gun and armor works, situated at South Bethlehem, Pennsylvania, make a showing that never fails to draw expressions of astonishment from every visitor. The most visible exhibit in the whole building is the great structure which bestrides the main aisle like the Colossus of Rhodes. It is an exact reproduction of Bethlehem's 125-ton steam hammer, the largest in the world, under which the heaviest armor plates are forged and shaped. It is appropriately placed amid the models and sectional plans of battle and merchant ships, which require the pro-

ducts of the forge. It towers ninety-one feet in height to the very

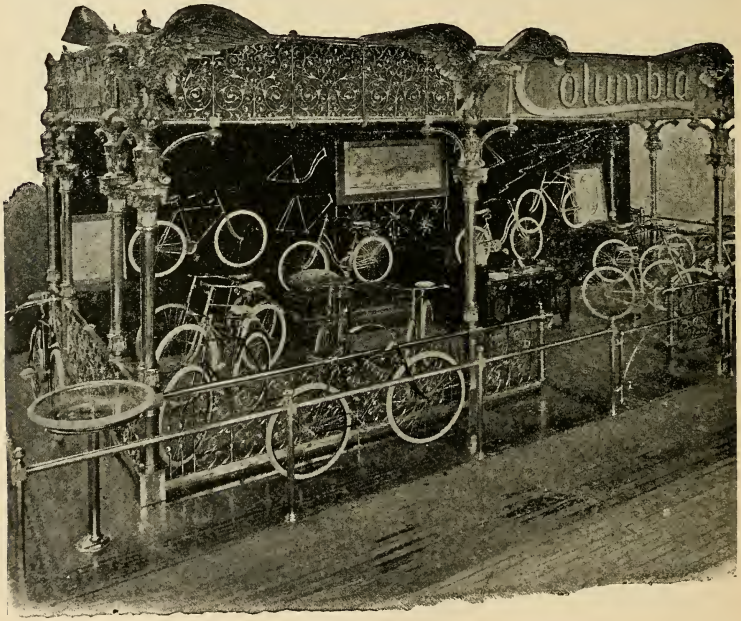


MODEL OF 125 TON HAMMER.
Exhibited by Bethlehem Iron Company.

roof beams, and so well have the wood and staff been moulded together that to all appearances the model is solid iron. The anvil

blocks could not be shown in place, as it would obstruct the passage way. Besides this, the Bethlehem Company shows modern cannon of great size; armor plate which seems impenetrable, and castings of enormous size. There is one fluid-compressed steel ingot or casting, fifteen feet long and fifty-four inches in diameter, weighing forty-eight tons. From a similar ingot weighing sixty-five tons was made the shaft of the famous Ferris Wheel in Midway Plaisance. The same company also shows steamship shafts, and solid and built cranks for vessels.

After the Bethlehem Works comes a large area devoted to the exhibit of France. There are a number of locomotives and other

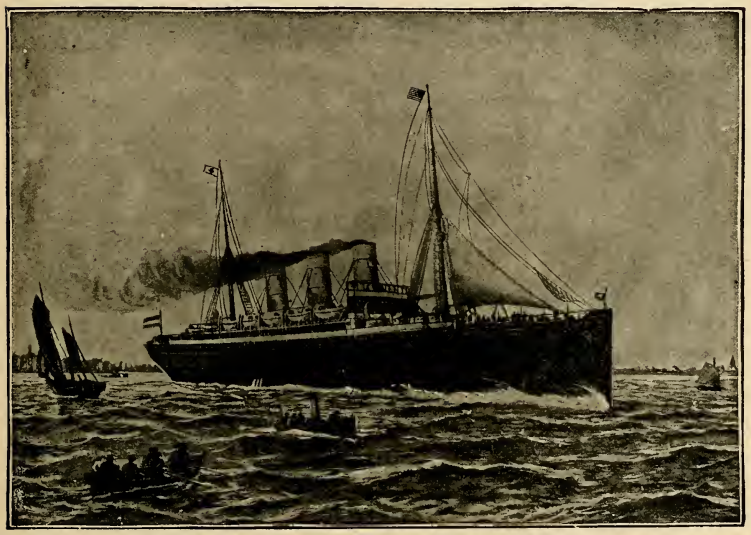


COLUMBIA BICYCLES.
Exhibit of Pope Manufacturing Co.

railway equipments; models of ocean steamers, both passenger and war; and all sorts of modern carriages, bicycles and other modern

transportation appliances. This exhibit not only extends from the central aisle to the front of the building, but also reaches well into the annex.

Facing the French exhibit is the model and exhibit of the town

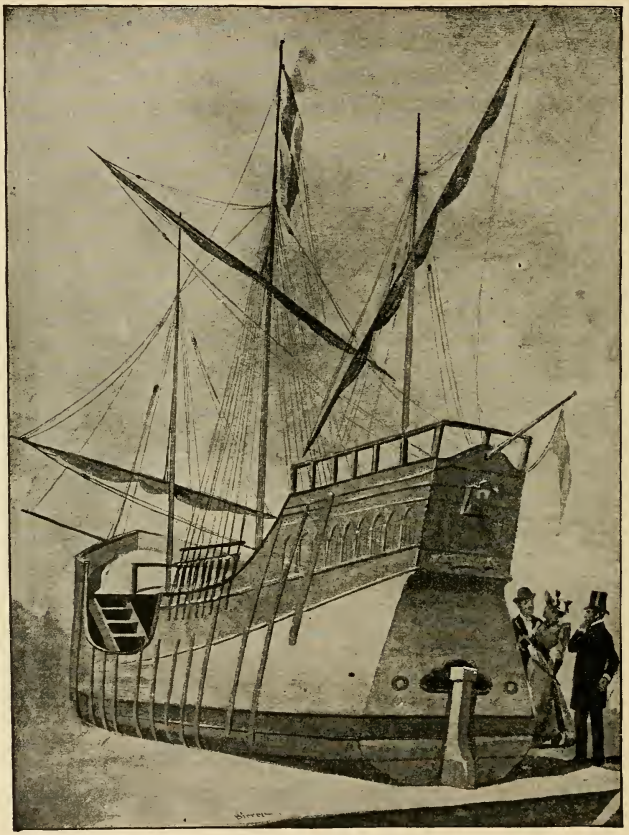


"FUERST BISMARCK."—HAMBURG AMERICAN PACKET CO.

of Pullman. It is built to scale and is always a centre of interest for the many who are curious to know the plans and accomplishment of this practical example of a perfect city. Next is a model ticket-office fitted up by the firm of Rand, McNally & Co., of Chicago, the noted printers of railway tickets, folders and maps. The centre of the building is now reached, and here in a circular open space is the exhibit of the Otis Company, consisting of eight passenger elevators. This vertical transportation department conveys curious visitors to the top of the building, whence a splendid view may be had.

Great Britain comes next with her colonies, Canada and Australia, occupying four sections, extending entirely across the building

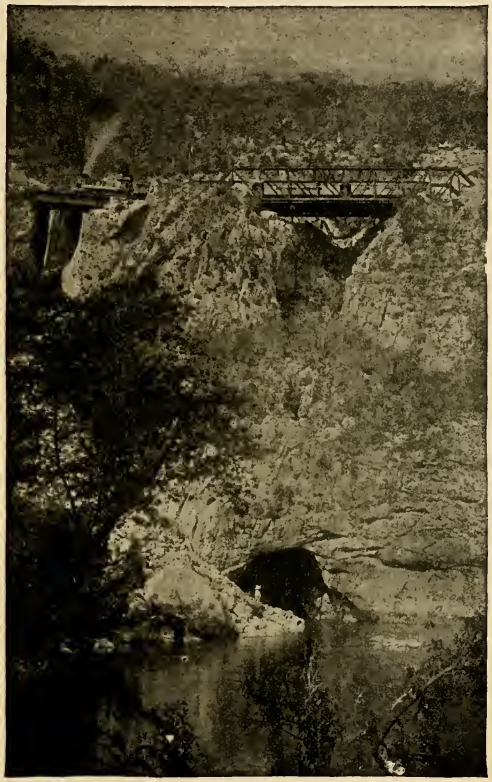
and annex. The most interesting of the exhibits here is the locomotive, "Lord of the Isles," built in 1851 for the first World's Fair, which has been in continuous use ever since. There is also a



MODEL OF SANTA MARIA.

complete train of English cars, with the fine compound locomotive, "Great Britain," affording an opportunity for comparing British and American railway methods. The marine exhibits of Great Britain

are especially fine, nearly all of her great ship-building firms being represented by models. One model, that of the armored war-ship "Victoria," is thirty feet long and cost $20,000. But half of the vessel is thus constructed, and it is placed against a great mirror which duplicates it and thus makes the whole vessel appear. Surrounding the model at the water-line is a plate of green rippled glass, so that the effect is produced that the ship is floating in the ocean. It is this vessel which was sunk by her companion, the "Camperdown," in the east end of the Mediterranean Sea, when hundreds of lives were lost. This occurred during the early months of the Fair, and from that time the magnificent model was heavily draped in black and has been the centre of attraction. Many of the finest Atlantic liners and other large war vessels are displayed, and a model of the great Forth Bridge of Scotland is shown. Australia shows a model of the wonderful zig-zag railway in the mountains of New

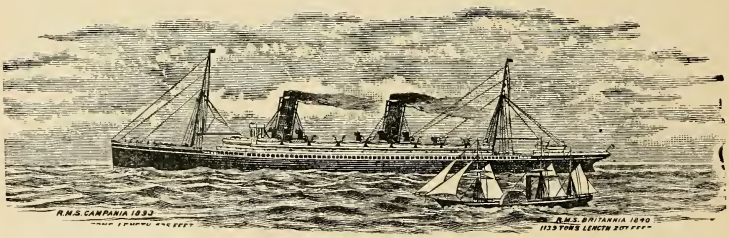


CHOY CAVE.
Mexican Central Railway.

South Wales. The feature of the Canadian exhibit is a train of the Canadian-Pacific railway, the woodwork of which is solid mahogany.

The next exhibit is that of the Johnson Railroad Signal Company, and across the aisle from it that of Spain. The latter is made up chiefly of marine models, models of celebrated fortresses, and a model of the Cordova Bridge, whose foundations were laid nearly 2,000 years ago. A little yet to the east is the display of Brazil. In the Mexican section a fine display is seen, consisting largely of exquisitely fine saddles and horse trappings. There is also a relief map of that republic showing modern systems of transportation. The Mexican Central Railway Company shows a number of beautiful paintings and photographs, among them scenes in the Choy cave.

Argentine Republic is just across the aisle from Mexico, and adjoining is the display of the Cunard Steamship Company. Here are displayed nine models of their best steamers. There is a wonderful contrast between the "Britannia," built in 1840, with a ton-



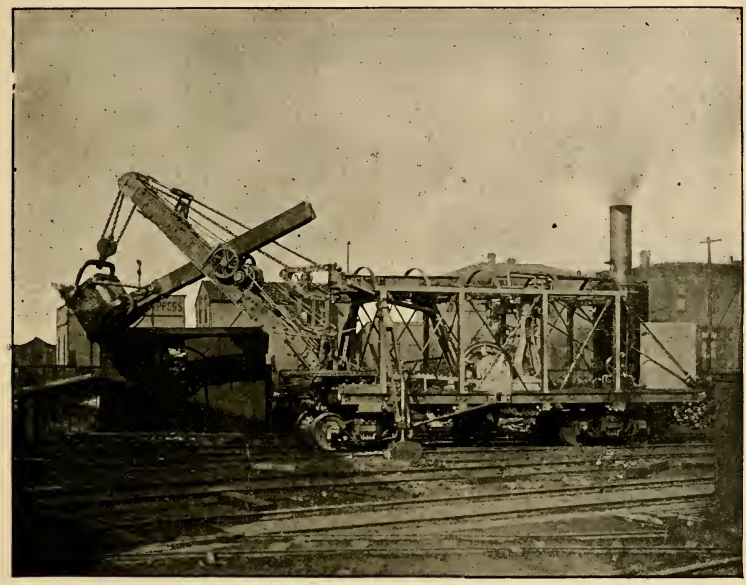
MODELS EXHIBITED BY CUNARD S. S. CO., SHOWING COMPARATIVE SIZES OF FIRST AND LATEST VESSELS.

nage of 2,050 and 405 horse-power, and their last, the "Campania," built in 1893, with a tonnage of 13,000 and 30,000 horse-power. It is the proud boast of this company that never in its long career as a carrier of passengers has it lost a single one entrusted to its care.

The Westinghouse Air-Brake Company and the New York Air-Brake Company are neighbors, the former showing the operation of air-brakes on a train of one hundred cars, the largest train ever

operated by a single system of brakes. The visitor now passes the exhibits of Austria and Russia, and some other minor displays, and reaches that of the Pullman Palace Car Company, a magnificent train of cars of their latest style.

The Baltimore & Ohio Railway's historical exhibit deserves



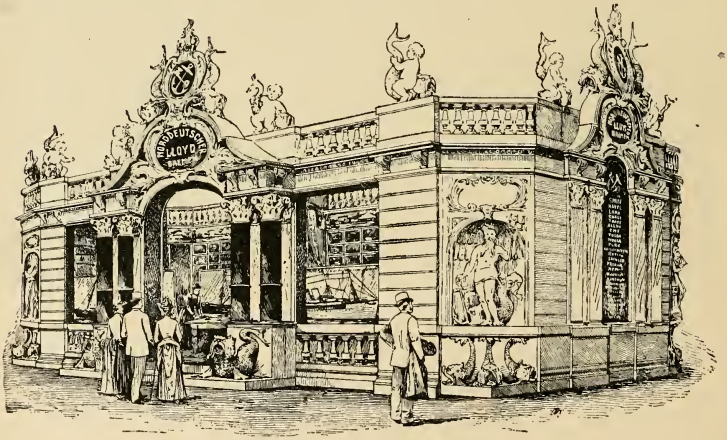
STEAM SHOVEL.
Exhibited by Marion Steam Shovel Co.

special mention. This is the oldest railway in the world, having been opened to general traffic from Baltimore to Ellicott's Mills, a distance of fourteen miles, May 24, 1827, six months earlier than the Liverpool & Manchester Railway, which was the first in Europe. The "York," costing $4,000, their first locomotive, is shown; also a strap-rail track and other features of that day, as well as the latest improved types of engines, trains and appliances. The Pilot Commission of New York, in another special display, shows the model

of a pilot boat, and oil paintings illustrating the perils of the service.

Among the marine curiosities is a bateau, found on the bank of the Upper St. Croix river, and used before Illinois was organized as a Territory. It carried eighteen men and one ton of freight, and was employed in Indian trade. Canada's exhibit shows some curious boats, birch-bark canoes, large and small, such as were used by the Indians and by the Hudson's Bay Company, and dog trains.

The British section shows the original Stephenson locomotive, the "Rocket." The Baltimore & Ohio Railroad exhibits Oliver Evan's steamboat on wheels, which was designed to run either on land or water. The Chicago & Northwestern Railway exhibit contains the old "Pioneer," the first locomotive ever brought to Chicago. In the annex several of the English and Irish railways make a handsome exhibit of the beautiful scenery along their line.

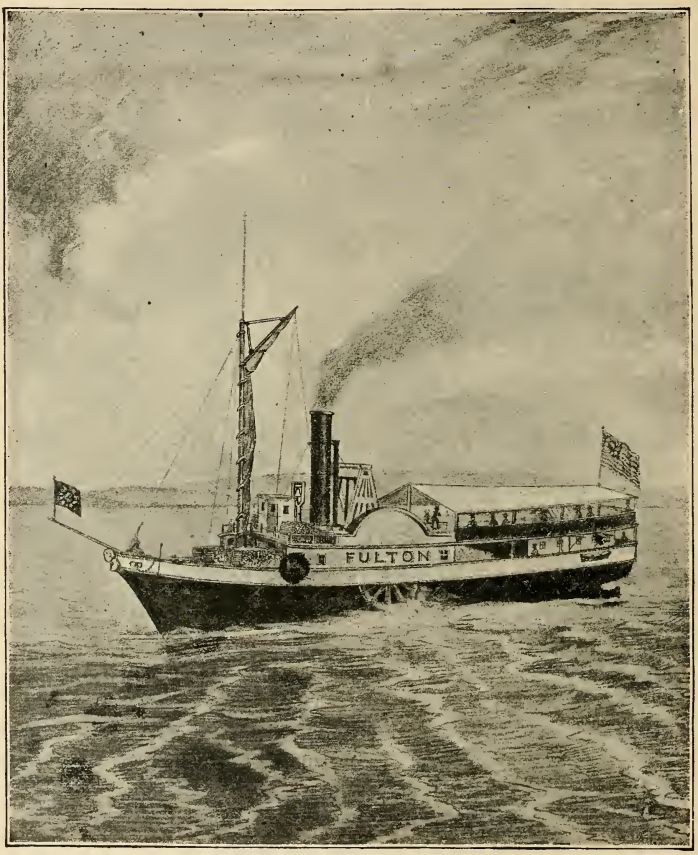


NORTH GERMAN LLOYD STEAMSHIP CO.'S PAVILION.

The North German Lloyd Steamship Company exhibits a globe, on the oceans of which the positions of all their various vessels are shown daily by small models moved to correspond to the movements of their original. Jay Gould's passes are framed and make

COMPOUND FREIGHT LOCOMOTIVE, "DECAPOD" TYPE. WEIGHT, 195,000 LBS.
(Exhibit of Baldwin Locomotive Works.)

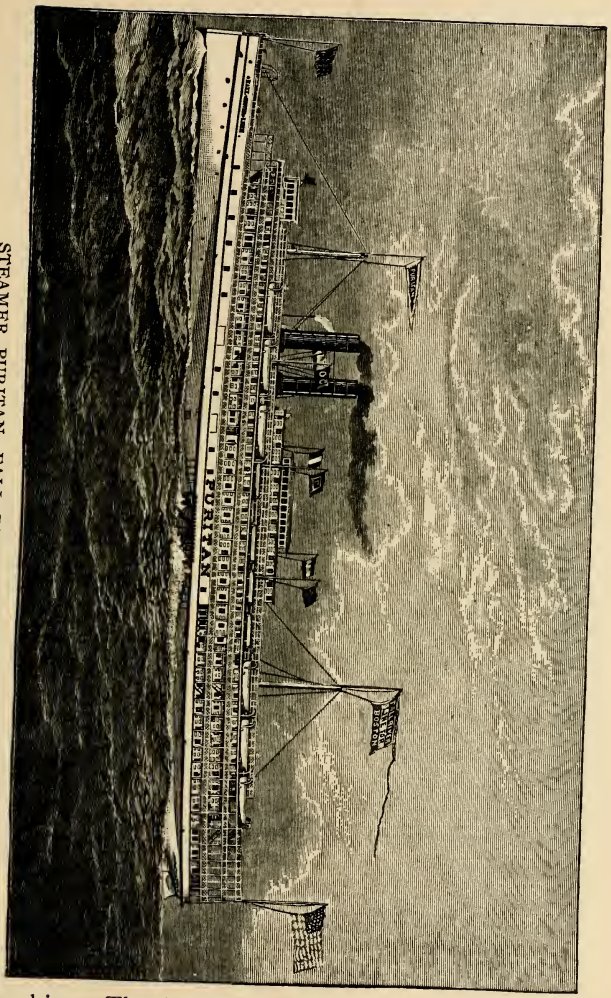
an unique exhibit. Several locomotive works, including the Brooks,



THE FIRST STEAMER ON LONG ISLAND SOUND.

Model Exhibited by the Providence and Stonington S. S. Co.

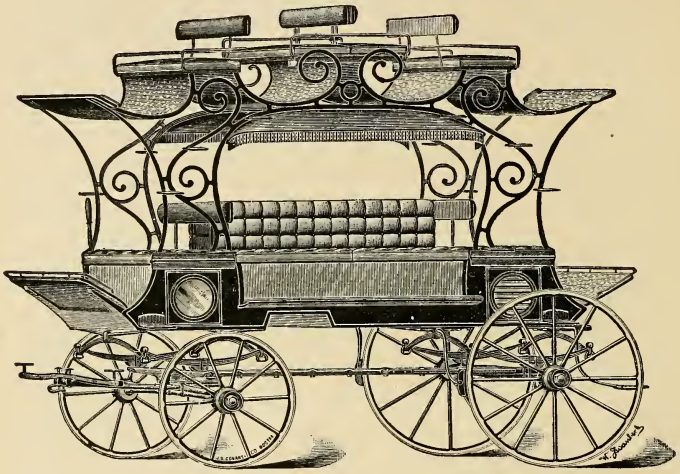
the Baldwin and the Rogers, make excellent displays in the annex. The Sheffield Velocipede Car Company, of Three Rivers, Michigan, shows hand-cars, railway velocipedes, sail-cars and other transporta-



STEAMER PURITAN, FALL RIVER LINE EXHIBIT.

tion novelties. The Griffin Wheel Foundry Company, of Chicago, has an exhibit of car wheels, chiefly the ones in actual service under various cars.

The Providence & Stonington Steamship Company of New York makes an exhibit to illustrate the progress of shipbuilding as applied to Long Island Sound steamers from the earliest times of



TALLY-HO. *Exhibited by Briggs Carriage Co.*

steam navigation on the Sound to the present. The exhibit consists of a complete model of the steamer "Fulton," built in 1814 from designs by Robert Fulton. This was the first steamboat to make the trip on Long Island Sound, which event took place in 1817. The "Fulton" made a trip from New York to New Haven and returned, and afterwards formed, in connection with the Connecticut, the first line between New York and Providence. A model of the steamer Jno. W. Richmond, a famous vessel, built in 1838 to run on the Providence line, shows a marked advance in type and arrangement from the Fulton. A model of the steamer "Maine," one of the twin steamers built by this company in 1892, shows the most advanced type of Sound steamers. A series of pictures showing many more Long Island Sound vessels, both old and new, are exhibited, while company and steamer flags are used as decorations.

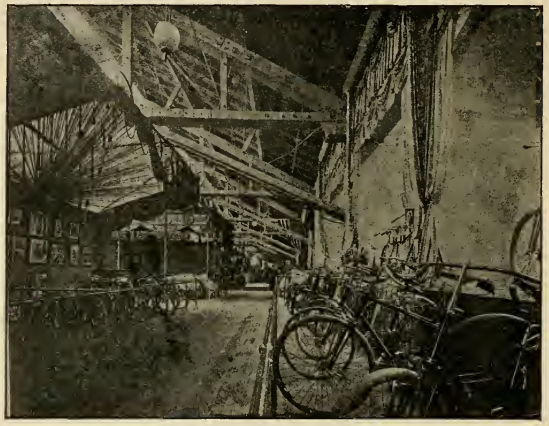
The north end of the Transportation Building is taken up by the display of wagons, carriages and buggies of every pattern. It is impossible to name more than a few of the notable ones. Among the exhibitors are Brewster, of New York; Studebaker, of Chicago; the Glens Falls Buckboard Co.; Fish Bros. Wagon Co., of Racine, Wisconsin; A. Streich & Bro., of Oshkosh, Wis.; the Selle Gear Co., of Akron, Ohio; Rattermann & Luth, of Cincinnati; the Favorite Carriage Co., of Storrs, Ohio; the Fulton & Walker Co., of Philadelphia; and others. Included in these exhibits are the finest of carriages, sleighs, and other vehicles of every description. The James Cunningham Co., of Rochester, and the Rock Falls

TALLY-HO. *Exhibited by Studebaker Bros., Chicago.*

Manufacturing Co., Sterling, Ill., show fine hearses and funeral cars.

All the leading bicycle manufacturers of the United States and England show their wares, and the display is bewildering to the enthusiastic wheelman. Pleasure boats of small size are shown by various Canadian, English, and United States exhibitors. The

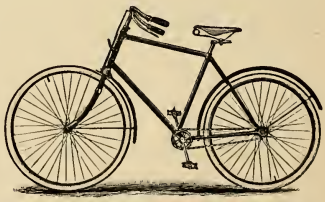
cedar canoe is shown in its perfection by J. H. Rushton, of Canton, New York. The range of exhibits in this building is something enormous, and beside all that we have named includes such as stuffed mules, and ox-carts from Mexico, Madeira and Sicily; Red River carts from Winnipeg, and dug-outs from the South Sea Islands. There are also sedan-chairs, walrus hide boats, and pictures illustrating the progress of aerial transportation.



BICYCLE EXHIBIT.

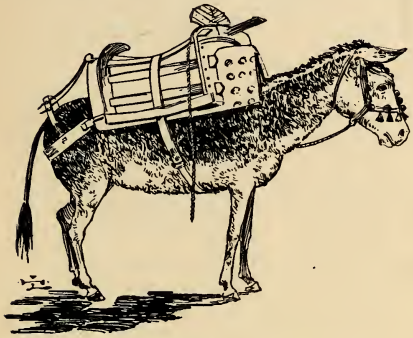
The New York Central & Hudson River Railway Company has a building and large space just to the south of the annex, which it shares with the Wagner Palace Car Company. The display included here is an elaborate one.

Across the street yet to the south of this is the model four-track suburban passenger station of the Pennsylvania Railway Company. It is equipped with interlocking switch system and every modern appliance of safety that inventive genius can suggest. The exhibits here are of great interest. The original John Bull locomotive, and two fifty-seven-year-old passenger coaches of the old Camden and Amboy Railroad are the most conspicuous. This train ran from Philadelphia to Chicago at the opening of the Fair and attracted



BICYCLE. *Exhibited by Gendron Iron Wheel Co.*

great attention throughout the route. There is also shown the car designed by this railroad for carrying the sixty-two ton Krupp gun from the sea-board to Chicago. It consists of two flat-cars of 100,000 pounds capacity each, and a bridge connecting the two cars. It is a triumph of mechanical construction for handling such enormous weights.

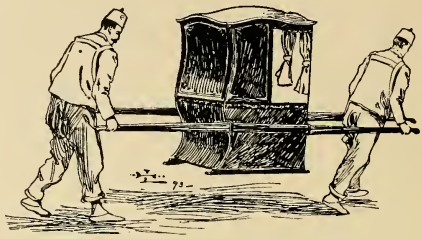


STREET CARRIER OF CONSTANTINOPLE.

The other big gun car, which is constructed to support a weight nearly twice as great, is therefore

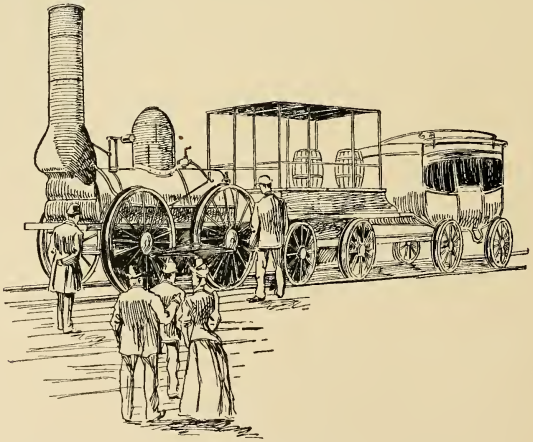
MEXICAN CART.

nearly twice as great a wonder. It has a capacity of 285,000 pounds, and is built entirely of boiler steel. It consists of a major bridge, two minor bridges, and four eight-wheel cars. The gun rests in the major bridge on two supports which closely fit it. The extreme length of the car is ninety feet, and the weight of the car, loaded with gun and both bridges, is 445,000 pounds.



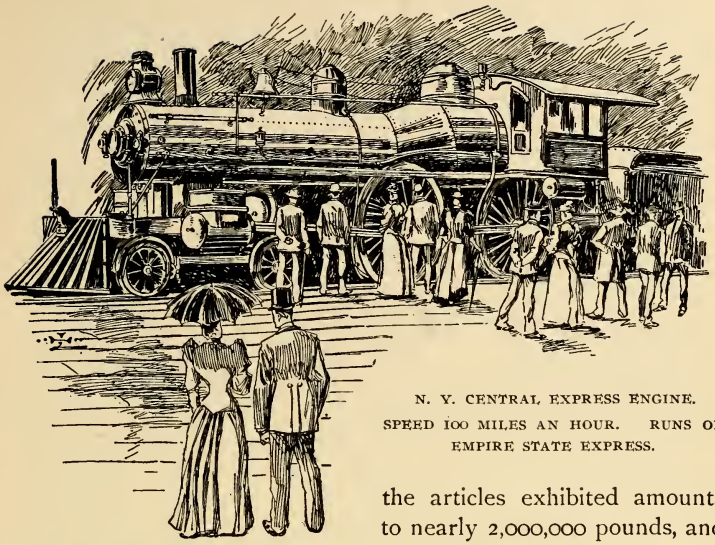
A SEDAN CHAIR.

Nearly a mile from the Transportation Building, to the southeast, and facing the lake shore, is the building devoted to the exhibit of Herr Krupp, of Essen, in Germany. He is the greatest of all cannon manufact-



DE WITT CLINTON. FIRST ENGINE ON N. Y. CENTRAL R. R.

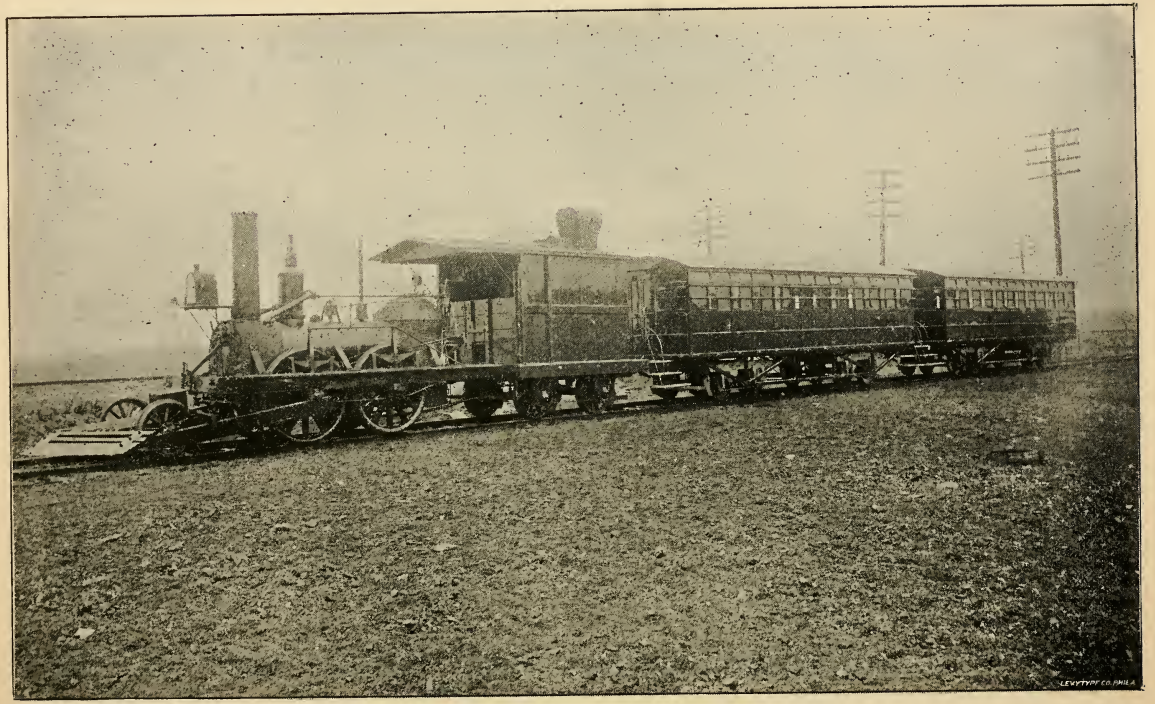
urers, and this exhibit is a wonder that attracts every one. Here is found the largest cannon ever cast, as well as many other wonderful evidences of mechanical skill and ingenuity. The weight of



N. Y. CENTRAL EXPRESS ENGINE.
SPEED 100 MILES AN HOUR. RUNS ON EMPIRE STATE EXPRESS.

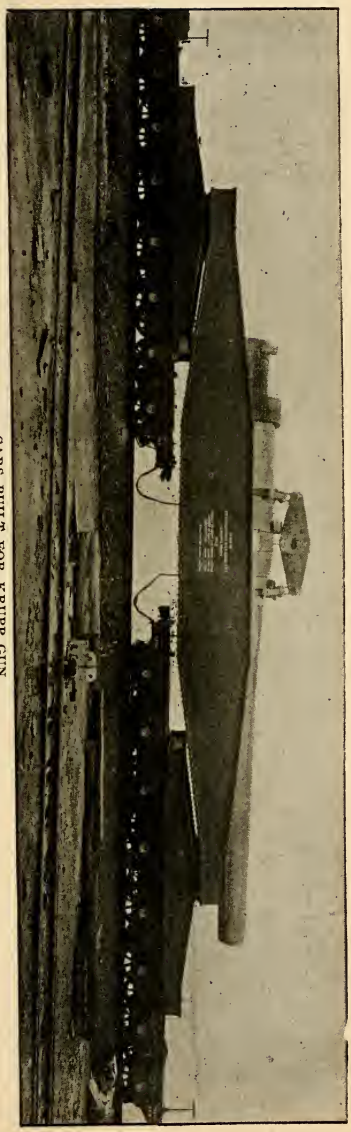
the articles exhibited amounts to nearly 2,000,000 pounds, and they are valued at $1,000,000. First in interest is the monster 124-

PENNA. RAILROAD MODEL STATION.



290 JOHN BULL TRAIN. (*Pennsylvania Railroad Co. Exhibit.*)

ton gun which cost $50,000 to manufacture. Its length is eighty-seven feet, and its bore twenty-five inches. The projectile used weighs 2300 pounds, and the cost of a single discharge is $1250.00. Its range is from fifteen to sixteen miles, and if discharged on the lake front, the concussion would shatter most of the window glass in Chicago. The carriage for this monster weighs 38,500 pounds, the frame 55,600 pounds, and to manage it requires an eighty-five-ton traversing crane. There was but one place on the Atlantic seaboard, Sparrow's Point, Maryland, where there was a set of hydraulic shears of sufficient power to handle this gun. In the exhibit are found other guns, large and small, and all their accessories. Not the least interesting thing is an immense steel target, eight feet square and sixteen inches thick, which shows the effect of a gun firing 600-pound balls. It is asserted in all seriousness by the German engineers accompanying this exhibit that if the big gun were fired on the grounds the concussion would wreck every building in



CARS BUILT FOR KRUPP GUN.
Exhibit of Penna. R. R. Co.

the park. Herr Krupp intends to present his monster gun to the United States Government for the defence of the great port of Chicago.

An adjunct of the transportation exhibit is the old whaling bark "Progress," exhibited by New Bedford, Mass. It lies in the south pond not far from the Krupp exhibit. This old craft was built in 1841, and has passed through many winters in the whaling industry of the Arctic regions. All sorts of articles are shown, such as are used in the whaling industry, as well as the products which they capture. There are also mementos of the terrible disaster of 1871, when thirty-three whaling ships had to be abandoned in the ice, their crews being rescued by the "Progress" and a few other vessels.

Brewster & Co. exhibit a sleigh which is one of the most elaborate examples of wood-carving to be found any place within the Exposition, and also one of the most beautiful of vehicles. It represents a shell supported by conventionalized forms of sea life with ferns and sea-weed for decorations, the color being a sea-green. The designs are most intricate, and the carving required more than a year to accomplish it. It is luxuriously upholstered, and is held at a price which makes it fit only for an Arctic emperor.

In spite of the length to which this chapter has been drawn, it has been impossible to exhaust the list of worthy exhibits contained in the transportation department, and there are many more notable ones which it would be well to name were that possible.

One needs but to glance through the hurried lists of exhibits in this department to realize the enormous importance of it to every man. A quotation from Macaulay above the golden door of the Transportation Building informs us on the authority of that great essayist and historian that of all the inventions of the world, the alphabet and the printing press alone excepted, those inventions have done the most to advance civilization and mankind which abridge distance. No one can doubt this who studies for an object lesson our own American Republic. The United States has been singularly favored by transportation facilities of every kind. The invention of the steamboat was yet young when prows began to divide the waves of every river and lake where civilization had

spread. Not only our traffic with foreign countries, but also our own interior commerce advanced enormously by this means. The Hudson River system, the St. Lawrence River system, and the immense territory tributary to the great lakes; the Mississippi system, including the Ohio, the Tennessee, the Cumberland, the

SHELL SLEIGH.—*Exhibited by Brewster & Co.*

Missouri, the Arkansas and the Red rivers with their millions of acres of fertile prairie land, and mighty forests, and mineral wealth, all received an impetus never given to so great a region by any other influence before. Villages grew from frontier settlements, and cities from villages, while States were builded from Territories while their pioneers were yet young. This the steamboat did, or at least began.

Then the railroad came, and the iron trails wound over the

plains and through the mountains where before the earth was trodden only by the infrequent passing of the Indian or the trapper. Other States grew, out of the reach of water courses, and on every hand was heard the whistle of the locomotive. Very often even advancing civilization drawn by the steam horse reached the edge of the wilderness where fierce animals and fiercer red men disputed at every step the advance.

The record of the country would be called a miracle if demonstrated to our ancestors but a century ago, and yet it is no miracle, but the product of the force of man's mind and muscle. It is eminently fitting that in this country should be erected the first great building devoted exclusively to a display of transportation exhibits.

But, in our familiarity with steamboat and steam locomotive, there must not be forgotten some of the other means of transportation which have aided the advance of our civilization. No one of them is insignificant. There was a time when the American clipper ship bore the commerce of the world; when our flag was on every sea, and when our voyages circled the globe. Then the American ship and the American sailor, and the American captain were the best of all. Of late years there has been a degeneration from this proud record, and yet there are those who hope yet to see a return to this greatness when foreign commerce shall be shared by our country in a proportion which its size and wealth justify.

The pony express and the overland mail are familiar names to us, but they seem far away. We do not realize that it is but little more than thirty years since those opening wedges into western civilization were first instituted. Only thirty years ago, daring riders carried letters of tissue paper at a price of five dollars per half-ounce from the Missouri river at St. Joseph to San Francisco, and the marvellous speed made by these pony riders is yet a matter of wonder. Many a time their speed was accelerated by the sound of an Indian war-whoop or the whistle of an Indian bullet past their ears as they sped away over the alkali plains. Relics of these two notable factors in the history of American transportation are exhibited here, and there are none of more interest.

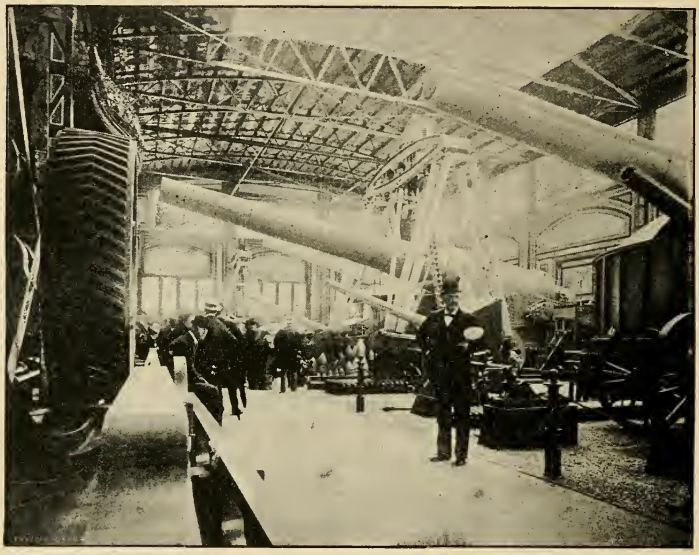
The only country whose exhibits compare in interest with those

of the United States is our next door neighbor, Canada. Remembering as we do the magnificent surface of the trans-continental Canadian Pacific Railway, it is difficult to realize that in this country there are yet employed some of the most primitive methods of transportation, whether for passengers, freight or mail. The Hudson's Bay Company employs the same means of conveyance whether by land or water that it did one hundred and two hundred years ago, through great portions of its territory. All over the northwest portion of British America, extending to Alaska and into the borders of the Arctic region, there are posts scattered where trappers and Indians secure the valuable furs that protect us in winter and spend their lives in the wilderness. To some of these the Company is enabled to send communications but once a year,

KRUPP GUN-WORKS.

while others receive word from civilization oftener. About the 1st of December each year a party of brave and hardy men inured to hardship, cold and danger, turn their faces northward from the city of Winnipeg to seek their friends in the great lone land of the

north. There is but a small band of men at the beginning. Their only living companions are the hardy dogs of that region which have been trained to harness and which are hitched to the great sleds. Upon these sleds are packed the mail-bags, the provisions and the other supplies necessary for the long journey. The men



INTERIOR OF KRUPP GUN-WORKS.

run along beside the sleds at a rapid gait, because if they should sit down on them and be drawn by the dogs they would soon freeze. Nothing but constant motion can keep them warm during the more northerly part of the journey. They go down the Red river of the North on the ice until they reach Lake Winnipeg, and then continue northward on its icy surface for more than two hundred miles. At a point near its northwest angle the party divides, some of the men and sledges continuing northwest and another portion turning northeast past Norway House and toward Hudson's Bay. The first ones follow their northwestward course, passing numerous

posts of the great company of fur traders, and at each place leaving a portion of the mail and of their party. Reinforcements are taken when needed, but at the end, when all but one mail-bag has been delivered, and when a map of all the routes followed would resemble the great trunk of a tree with its branches dividing and subdividing in every direction, then to the topmost branch, far within the frigid zone, but one solitary man and one lone team of dogs bear and guard the precious freight. It is a lonesome journey, and an impressive one, when we think how easily the service of all these different methods of transportation are enlisted to convey our missives. For a few cents a gummed bit of paper guarantees to us that our message will be borne wherever in the world civilization or semi-civilization houses our friend. Relics of this service are included in the collections of the Transportation Building, as well as the canoes and other water craft which convey the summer traffic of the same company.

SAIL CAR. *Exhibited by Sheffield Velocipede Car Co.*

In the English exhibit the feature of greatest interest, with the exception of the magnificent model of the sunken "Victoria," is the historical craft in which Grace Darling, the English heroine, rescued so many persons from drowning. It is sea-battered and weather-worn, but its timbers are staunch and strong yet, and it could ride many a storm should necessity arise. It is an unwieldy and heavy craft, and one marvels how a frail young girl could have

handled it to propel and keep it right side up in the breakers, and to assist those so sorely in need.

From the South Sea Islands we have all sorts of odd craft, and from the Malayan Archipelago specimens of the flying proa, that fastest of all boats, so it is said, which flashes through the water like a beam of light, and which, manned by a crew of piratical savages, has sent many an undefended boat with her crew to destruction.

MINE CAR. *Exhibited by Sheffield Velocipede Car Co.*

So, in whatever part of the world we go, we find as the most important feature of their civilization their methods of transportation. To-day, Corea, the hermit nation, is adding to its possessions a fleet of modern and first-class war vessels. Japan's navy contains ships of the most formidable character, and a number sufficient to rank her as one of the leading naval powers of the world. It is the facility of inter-communication between the various parts of the nation and between it and other nations, which measures to a large extent the degree of civilization which that nation may attain. One is specially impressed by this upon consideration of

the recent case of Japan. It is doubtful if any country can show in its history such a rapid advance in all things that make civilization as Japan displays in the last quarter century. The United States opened the doors of Japan to the world. Since then the forward movement of the Island Empire has been so rapid that she now asks no favor from any one, but only fair treatment. It is to the growth of transportation facilities that a great portion of the credit for this is due.

Therefore, in considering the exhibits here displayed in the Transportation Department at the World's Fair, the immense effect of the science of transportation upon the progress of the world should always be in mind, and it should never be forgotten that America has been the leader in the invention and improvement and adoption of appliances to be utilized for these purposes.

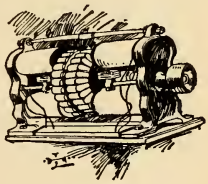
Electrical Buildings

ELECTRICITY ILLUMINATION FOUNTAINS

By Prof. JOHN P. BARRETT,
Chief of Department.

THE Columbian Exposition is a magnificent triumph of the age of Electricity. There are few exhibitors, few contractors and not many concessionaires who do not apply electricity in some form in the operation of their enterprises at the Fair. With the exception of some of the exhibits in Machinery Hall all the exhibits in all the buildings are operated by electrical transmission. The Intramural Elevated Railway, the launches that ply the Lagoons, the Sliding Railway on the thousand foot pier, the great Ferris Wheel, the machinery of the Libby Glass Company on the Midway, are all operated by electrically transmitted energy.

Beginning with the pressure of President Cleveland's thumb upon a "Victor" telegraph key that set the machinery of the Fair in motion on the first day of May, and ending at the hundred miles of ether pierced by the great German search lights on the Manufactures Building, or at the remotest terminals of the telegraph and telephone lines that keep the world posted on the progress and achievements of the Exposition, everything pulsates with quickening influence of the subtle and vivifying current.

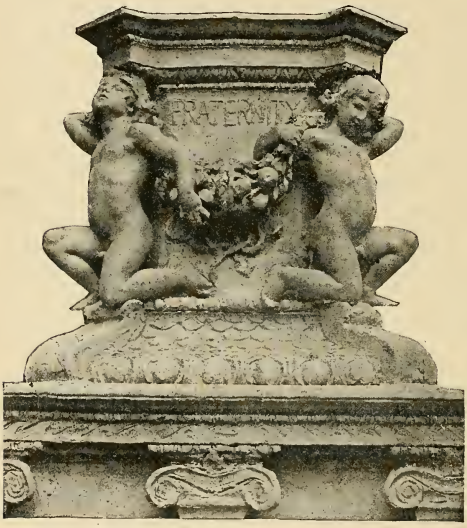


ELECTRIC LIGHT DYNAMO USED IN CENTENNIAL.

All this hardly seems strange to the boy who cannot look behind him into even the very near past, but to those of us who remember former Expositions there appears to have been some radical revolution at work to

accomplish what we now see before us. At the Centennial the Bell telephone was a toy; there were half a dozen arc lamps exhibited as scientific possibilities but not as commercial factors. Even at so late a day as the Paris Exposition of 1889 three thousand horse-power was the total energy employed, and that only immediately at the generating plant.

At the Columbian Exposition the total capacity of the generating plant is twenty-five thousand horse-power, utilized over an area of six hundred acres. The plant covers an area of one hundred and twelve thousand square feet. There are in operation arc lights, incandescent lights, power-motors for the operation of the machinery of exhibitors, a complete telephone service coupled to the Chicago exchange, a complete police and fire alarm telegraph system, telegraph lines, the electric fountains, the Intramural Elevated Railway, the electric launches, search lights, the equipment of the battle-ship "Illinois," and many classes of apparatus, some of which were given earlier in this article.

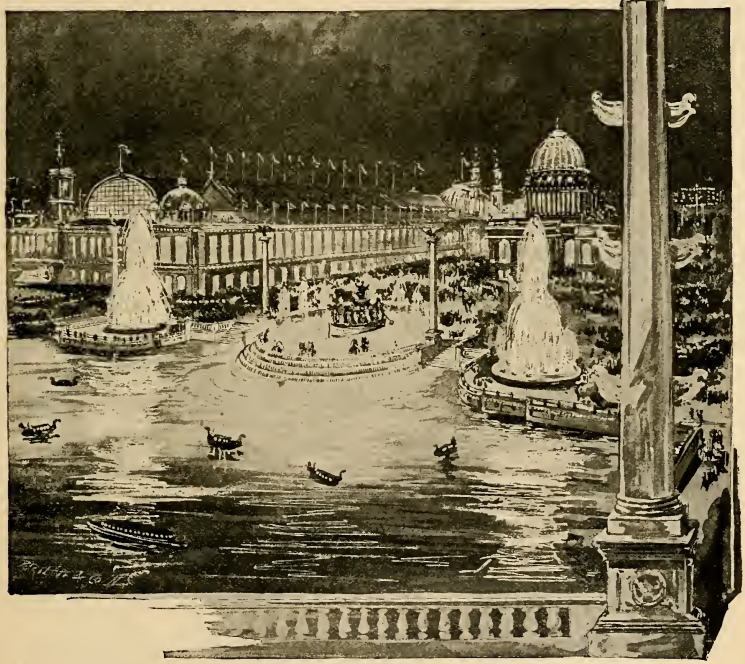


COLUMBIAN FOUNTAIN—PEDESTAL.

The electric lighting at the last Paris Exposition was furnished by 1,150 arc and 10,000 incandescent lamps, giving a total of about 1,600,000 candle-power. The lighting at Chicago comprises about 90,000 lights of 16 candle-power, or a total of 1,440,000 candle-power, and about 5,100 arc lamps, with a total of 10,000,000 candle-

power—a grand total of about 11,400,000 candle-power. The total capacity of the electric plant is about 5,000 arcs of 2,000 candle-power each, and 120,000 incandescent lights of 16 candle-power. It is significant that while the lighting alone at Paris called for the formation of a syndicate of nearly all the leading companies—over twenty in all—the lighting at Chicago, with the exception of about 500 horse-power, is furnished from the standard apparatus of four leading American firms.

Already seventy-five motors, aggregating 1,300



ELECTRIC FOUNTAINS AND ILLUMINATION.

horse-power, are placed for the use of the Exposition Company

alone, and electric power can be obtained by exhibitors in all buildings.

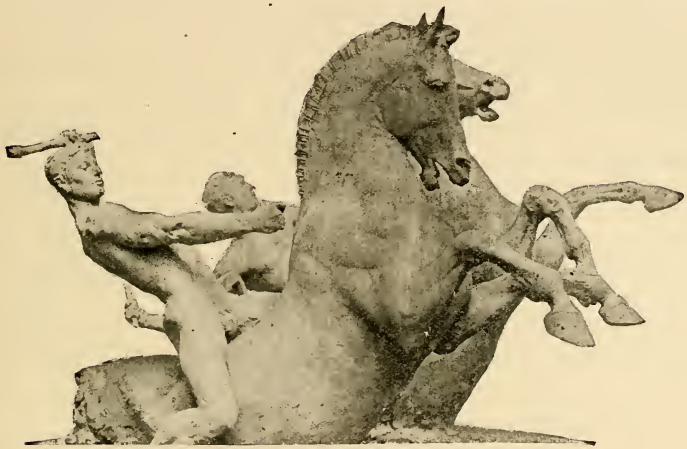
While the subject of electric power transmission is under consideration it may not be out of place to call attention to the service of electricity in building the Exposition. From the very beginning of construction the temporary power plant, now no more, ran day and night seven days in the week, operating motors in the daytime which furnished power for the saw-mills, hoists, pumps and painting machines, and at night grinding out light, so that the construction could be carried on day and night where necessary, and the engineers and draughtsmen could lay out work for other days and nights. Electricity helped to prepare the material, to hoist the heavy beams and trusses, to paint the buildings, and at the same time to prolong the labors of the overworked engineer and mechanic, and light the rough or muddy pathway of the Columbian Guard.

Of the arc lamps used in general illumination, 1,600 are used for lighting the grounds and 3,400 for lighting the buildings. Most of the arc lamps out on the grounds are hung in the ornamental posts, and in most cases those in the buildings are suspended from the ceiling and domes.

The crowning glory of the arc lighting is that of the central nave in Manufactures Building. This is undoubtedly the most unique and beautiful piece of arc lighting ever attempted. This space, which is about 1,300 feet long and 368 feet wide, with a height of 202 feet in the clear, is lighted by five great coronas. These coronas are suspended 140 feet from the floor. The central corona is 75 feet in diameter, and carries 102 lights; the other four, which are equally distributed along the main longitudinal axis, are 60 feet in diameter, and carry 78 lights each, making a total of 414 two thousand candle-power lights. The lamps are hung in two concentric circles. Although the coronas are in reality hanging galleries in which the lamp trimmer can walk at ease, they look light and graceful at the great height at which they are suspended, and the ladders by which they are reached from the great trusses would not be noticed by the ordinary observer. The effect of the lighting

is fine beyond expectation. Opal globes are used on the lamps, as upon all the arc lamps in the great plant. These diffuse the light, and with the great spread of the coronas and the reflection from the arched roof the lighting is so uniform that the eye cannot distinguish any variation of intensity upon the floor or the exhibit pavilions.

One of the most direct evidences of the magnificent resources of American engineers is given in the conduct of the incandescent lighting of the Fair. The Westinghouse Electric and Manufactur-



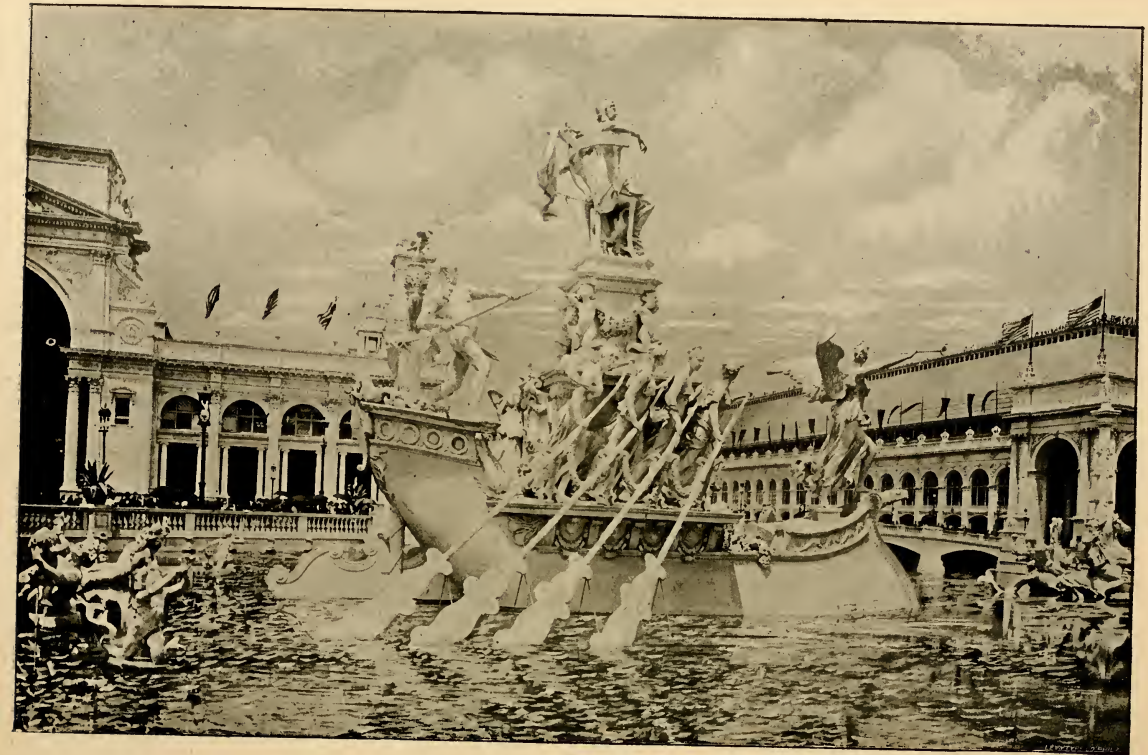
COLUMBIAN FOUNTAIN—THE OUTRIDERS.

ing Co., having secured the contract to furnish this immense service at figures far below the cost, as such work had always been done, it became necessary to devise a system more economical and at the same time more flexible. This was done. They devised and constructed in less than six months larger machines than had ever been built for this work before, and on radically different lines, embodying the principles of the alternating system of transmission. By this system hundreds of thousands of dollars' worth of copper wire were saved, as it was possible to send the current under high pressure to its destination on small wires, and then transform it

down at the point of utility. The courts decided that the Westinghouse people had no right to the use of the Edison lamp about the time the company got ready to install the machines, and the whole system was a failure unless a new lamp could be made. This was also done at once, and thousands of operators were put to work in temporary quarters, and the installation was completed at as early a date as was necessary on account of the backwardness of the steam machinery that was to drive it. In this achievement new principles in electricity were put to work, and what many people deemed a wild experiment became the largest and most satisfactory installation ever made.

With the completion of the incandescent service it was pointed out that no provision had been made for small motors to operate the machinery of exhibitors in the various buildings. At once an alternating motor was placed at the service of the Exposition authorities, arc lights were run from the same lines, and in obedience to a demand on the part of the United States Government a system of buoys lighted by incandescent 100 candle-power lamps was run along the deep water line from the city to the Exposition grounds.

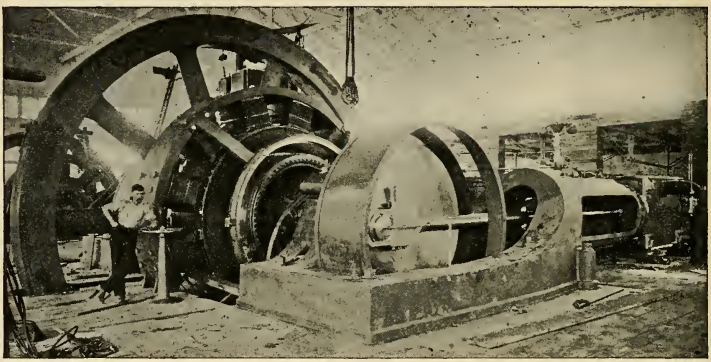
The electric fountains are among the prominent features at the Fair. Thousands of people stand at points of vantage about the great court each evening to watch the ever-changing beauties of these fountains. They are two in number, located on the lower terraces on either side of the McMonnies emblematical fountain, and are without a rival in ancient or modern days in hydraulic or electrical design. Supplied from the high pressure system placed for the fire protection of the World's Fair by the Worthington pump people, each of these two fountains requires for its own individual service the full capacity of a 16-inch water main under 100 pounds pressure. Located as they are upon the lower terraces, the necessity arose for operating casemates below the surface level of the lake. Altogether thirty-eight 90-ampere projector lamps, with burnished silver parabolic reflectors, by their concentrated effort, illuminate in the most pleasing manner the ever-varying streams of water projected through the nearly 400 apertures pro-



COLUMBIAN FOUNTAIN. (*Fredk. McMonnies.*)

vided. The entire management of these fountains is directed from the northeast tower of Machinery Hall.

The machinery used for the fountains is also used for charging the electric launches. There are fifty of these beautiful little boats, averaging forty feet long and having a carrying capacity of thirty people. After five or six hours charging each little launch will have stored away in its hold about forty horse-power hours of effective electrical energy, sufficient for ten or twelve hours continuous run. This charging station, located south and east of the Agricultural



2,500 HORSE-POWER ELECTRIC GENERATOR IN POWER HOUSE OF INTRAMURAL RAILWAY—BUILT BY GENERAL ELECTRIC COMPANY.

Building, is the most extensive ever put in in the United States, and probably in the world.

Upon the United States battle-ship "Illinois" are shown the methods of ship lighting and the distribution of electricity for general ship uses. Two standard naval direct coupled, iron clad generating sets are located between decks. In all her fixtures, her side lights, mast-head lights, binnacle lights, lights for cabin, for magazine, for coal-bunkers and for all other purposes aboard ship, the best appliances are shown. Here, also, are actively displayed several search light projectors; one of the largest projectors ever made in the United States, a 150-centimeter projector with a 200-ampere lamp.

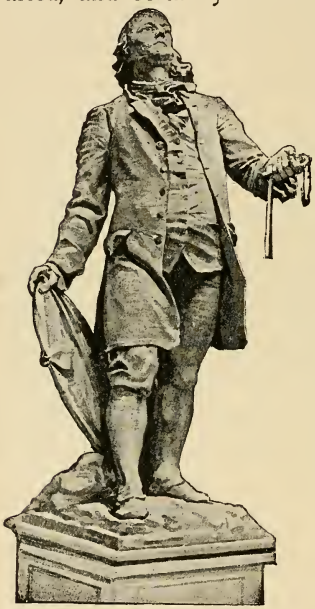
Of the Intramural Railway, suffice it to say that this most interest-

ing and most valuable demonstration of the applicability of electricity to high speed interurban service is looked upon with the greatest interest throughout the country. The freedom from smoke and dust, from smell and discomfort, from overwrought sympathies at brutal treatment and overloading of sensate animals, together with the attendant comforts of well-lighted and cleanly cars, will do more to assist in the popularizing of suburban life than any advance thus far made in the science of transportation. The flexibility and reliability of its system, the easy extension of carrying capacity without a diminution of schedule time due to overloading of engines, the easy extension of capacity without consideration of limits of strength of structure, will all be arguments in favor of electric traction strongly appealing to those most interested in elevated railway service.

In the line of exhibits that are "the biggest in the world" Germany may be credited with two—the 120-ton Krupp gun and the six-foot Schuckert search-light. The latter, which is of more immediate interest to the electrical fraternity, is mounted on the northwestern corner of the promenade about the roof of the Manufactures Building, which is reached by four elevators in the northern part of the building. There seems to be no doubt that this is the largest projector yet constructed, and Mr. Tischendoerfer, the World's Fair representative of Schuckert & Co., challenges comparison with any search-light in the world operated under like conditions. The lamp itself is six feet in diameter, and it is claimed that the illuminating strength of the arc is 57,000 candle-power, which is increased to 194,000,000 candle-power on the surface of the parabolic mirror. This mirror is seven-eighths of an inch thick, and six months was consumed in the labor of grinding and polishing it. After the mirror was completed, great care was necessary, of course, in packing it for shipment to Chicago. A padded receptacle was made, and this was enclosed in a strong wooden frame-work. The mirror was attached in this cage by four chains at the corners, and jarring was prevented by lateral springs fastened to the sides of the frame-work. In this manner the fragile mirror was safely transported by land and sea to its final resting-place on

the Manufactures Building at Jackson Park. It is claimed for the light that it can be seen distinctly for 100 miles if sent from a high point.

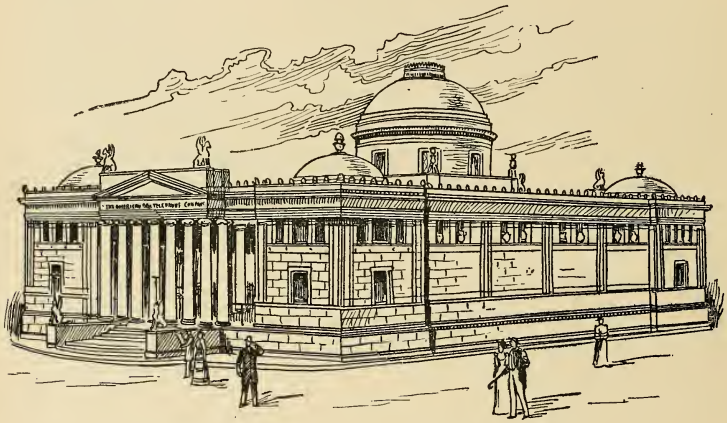
While the electrical display at the Exposition is greater in quantity outside the Electrical Building, the display inside is more varied, and certainly more beautiful. The building itself stands between Manufactures and Mines and Mining. Its south front faces the Grand Plaza, and its north the Lagoon. Its dimensions are 345 x 690 feet; its area five and one-half acres, and its cost $401,000. The architects were Messrs. Van Brunt & Howe, of Kansas City. The building is of Italian renaissance in style, and is elaborately finished with many towers. The general plan is based upon a longitudinal nave 115 feet wide and 114 feet high, crossed in the middle by a transept of the same width and height. The nave and the transept have a pitched roof with a range of skylights at the bottom of the pitch, and clere-story windows. The rest of the building is covered with a flat roof. The second story is composed of a series of galleries connected across the nave by two bridges, and reached by four grand staircases. The exterior walls of the building are composed of a continuous Corinthian order of pilasters supporting a full entablature and resting upon a stylobate. At each of the four corners of the building is a pavilion, above which rises a light open spire or tower 169 feet high. Intermediate between these corner pavilions and the central pavilion on the east and west sides there is a subordinate pavilion bearing a low, square dome upon an open lantern. The building has an



FRANKLIN WATCHING THE LIGHTNING. (*Carl Rohl-Smith.*)

THE SEARCH LIGHT.

open portico extending along the whole of the south façade. The lower, or Ionic order, forming an open screen in front of it. The details of the exterior orders are richly decorated, the general tendency of the decorations being to illustrate the purposes of the building. The walls of the hemicycle and of the various porticos and loggia are highly enriched with color. All of these are most brilliantly illuminated. The southern entrance forms one of the richest effects to be found in all the buildings of the Fair. A



PAVILION OF AMERICAN BELL TELEPHONE COMPANY.

great statue of Benjamin Franklin, modelled by the celebrated sculptor, Carl Rohl-Smith, stands in the front of this entrance. There are 40,000 panes of glass in this structure, or more than in any of the other buildings. Over the various entrances names of such electricians as Franklin, Galvani, Ampere, Farraday, Ohm, Morse, Siemens, Davy, Volta, Guericke and others. In selecting these names it was thought best not to honor thus any electrician who is now living.

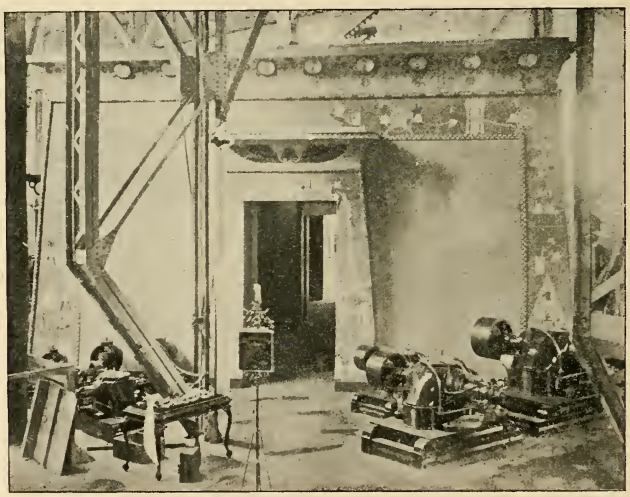
Beginning with the south entrance to the building is the exhibit of the American Bell Telephone Company. Although there is no competition in its line, the company has gone to an expense of

more than $150,000 to perfect one of the most unique and interesting exhibits on the Exposition grounds. Their pavilion is often criticised as being more properly adapted to out-of-door service, and should have been a permanent structure, as it is worked out in wonderful detail of design and architecture. Its central feature is a dome of bell shape, which is fitted up for use as an audience chamber. In it are given by long distance transmission opera and other music, speeches and vocal selections, the newly invented microphone being used to magnify the sounds so that the music which is borne over the lines from New York can be heard in almost any part of the great Electrical Building. Long distance connection is constantly established with New York and Boston, and through these cities with all the adjacent country, so a visitor may call up a friend in almost any part of the East and hold a very satisfactory conversation. The working part of the exhibit is a switchboard connecting all the telephones in the Exposition grounds, numbering some three hundred. The "Hello!" girls are seated in full view of passers through the pavilion, so that all the mechanism of connecting two parties who wish to converse may be clearly seen. Visitors have failed to observe in the mild-mannered young ladies any of those mulish propensities with which the telephone user ordinarily associates them. The photophone is perhaps the newest invention shown in connection with the exhibit. Upon a ray of light, with-

SCENE IN MODEL THEATRE.

out any wire or other connection, messages are sent and conversation may be held. Fully equipped diving apparatus is a part of the exhibit with telephone attachments; also marine and army telephones. There are models of more than 500 patents shown.

The next most prominent exhibit in the building is that of the Western Electric Company, of Chicago, immediately to the east of the main south entrance. This company has three pavilions, one an Egyptian temple paneled on the outside most uniquely with Egyptian figures and groups associated with electricity. For instance, there is a group of Egyptian maidens, of the time of Rameses the Second, operating a telephone board, and another group is of men of the same period laying telegraph lines. The



THE EGYPTIAN TEMPLE.

conceit is very popular. The two other pavilions are an instrument room, serving also to exhibit show case and show window lighting, and as a model theatre, one of the most interesting of all the exhibits. A firm of scene painters, Sosman & Landis, prepared the interior most elaborately, and the most artistic lighting known

is employed to make a moving picture of the (24) hours of the day, with all the soft tints of daylight and dusk, the long shadows of evening, and the mellow light of the moon, as well as the glare of the mid-day sun. A tower covered with lamps, from the top of

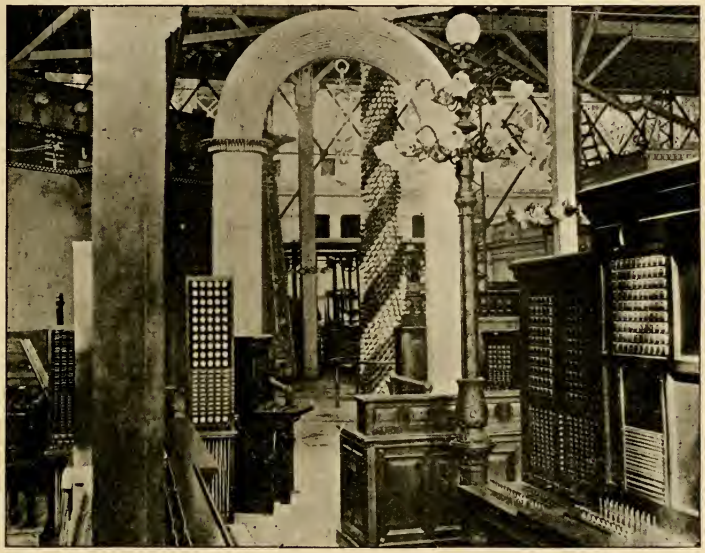
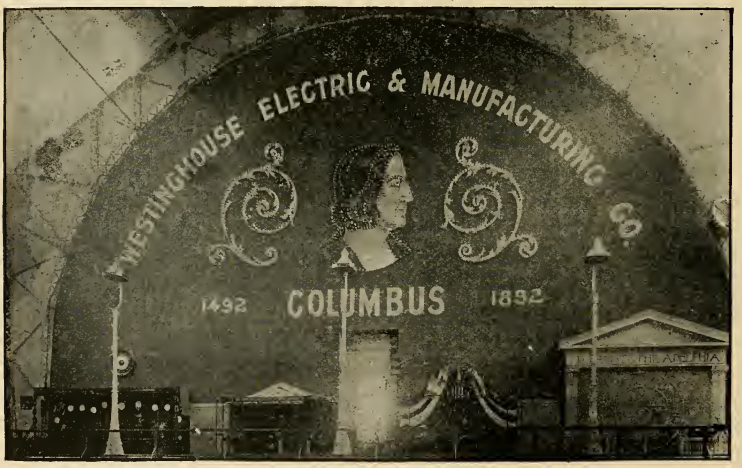


EXHIBIT OF WESTERN ELECTRIC COMPANY.

which are made to shoot in four directions long streaks resembling forked lightning, is an exhibit that holds the crowds longer than most other exhibits. The line of exhibits by this company is fuller and more varied than that of any other company, and they cover almost the whole field of commercial electricity. History has not been neglected and the early work of one of the greatest electricians, Prof. Moses G. Farmer, is shown in model form. An incandescent lamp, used with others like it to light his house in 1847, has a platinum filament and a glass case closed at both ends with copper plates. The current was generated by a primary battery, as the dynamo had not been invented. A railway motor made about the same time is also shown.

Besides a full line of central station apparatus and railway work, the Brush Company, whose exhibit is on the west side of the south main entrance, matching as to space and pavilion the exhibit of the Western Electric Company, has for a central feature a pavilion of very pretty design employed to show house and auditorium lighting. The lights are entirely out of view and focus their rays upon the ceiling, which is a dome, tinted cream color. This is by far the best piece of lighting of its character in the building.

Under the auspices of this company is also shown the new railway motor of the Sperry Electric Railway Company, said to be an advancement over others on account of its economy in operation.



MURAL DECORATION IN EXHIBIT OF WESTINGHOUSE ELECTRIC COMPANY.

Moving down the centre of the building toward the north is one of the spaces of the Westinghouse Electric and Manufacturing Company of Pittsburgh. The Westinghouse people were slow to indicate that they would exhibit, as they feared that the great incandescent lamp contract would employ all their time and money. Their business and standing, financially, was so improved, however, with the securing of that contract that they decided to show a full

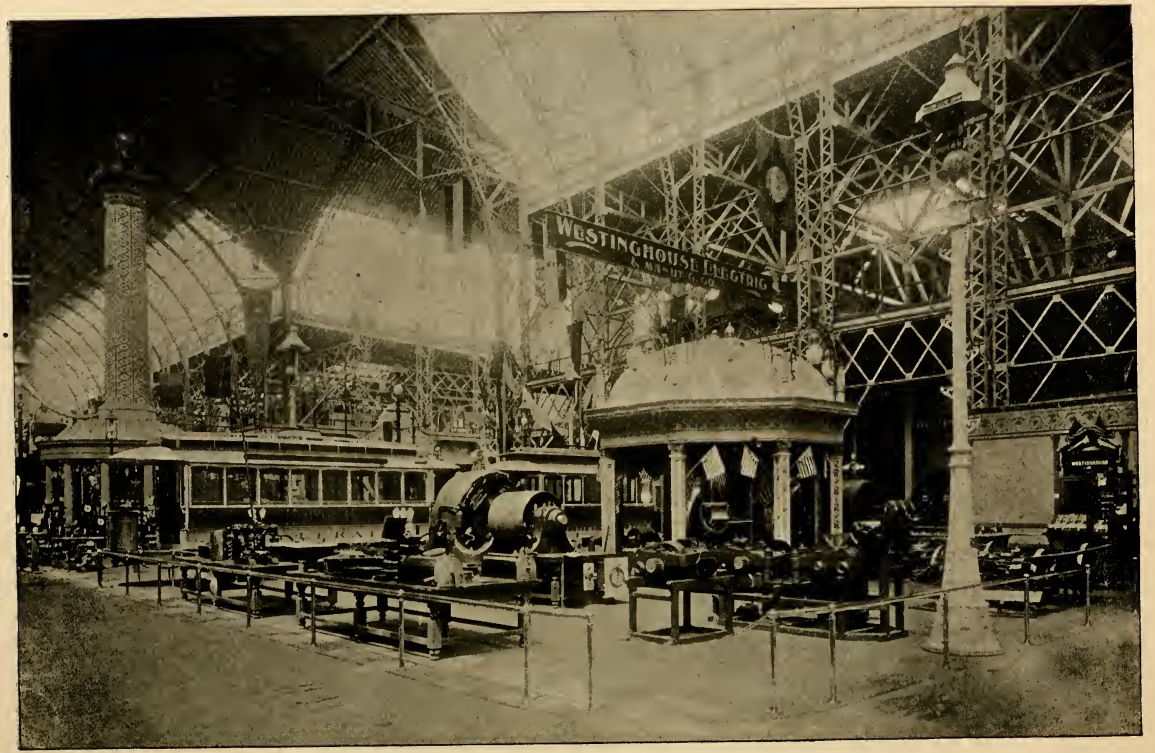
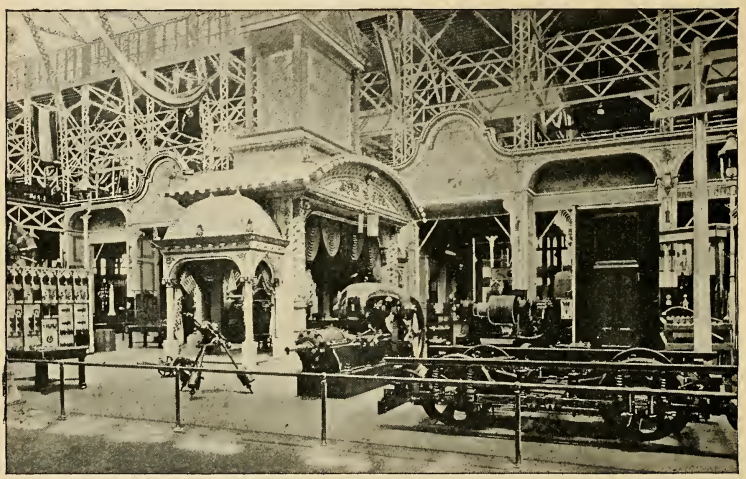


EXHIBIT OF WESTINGHOUSE ELECTRIC CO.

line of apparatus, especially artistic lighting with station service and railway apparatus. Their presence in the building is emphasized on the south wall, by a mural decoration in incandescent lamps, showing the figure of Columbus with the names, dates 1492–1892,



PART OF WESTINGHOUSE ELECTRIC COMPANY'S EXHIBIT.

and some beautiful scroll work. Altogether 1988 incandescent lamps of 16 candle-power in frosted and plain white and colors are employed in this artistic piece of work. On the ground floor a special dark building is used to illuminate the recent and absorbingly interesting developments made by Nicola Tesla, of the use of high tension alternating currents. Large glass plates backed with tin foil, on which are outlined, in paper, various figures, are used, and on them the play of the electric spark produces effects that are dazzling and extremely beautiful. A voltage of 30,000 is used up to the condensers, and after it leaves them it is estimated that the current has a power of two million volts. Mr. Tesla also shows a number of other interesting experiments, some of which are so marvellous as to be almost beyond description. The Westinghouse Company also has, as an exhibit, almost the entire display of

incandescent lighting on the grounds. To execute this enormous work they have built and installed, within the year, twelve generators of a total capacity each of 15,000 incandescent lights of 16 candle-power each. These are installed in Machinery Hall, adjacent to the steam plant, from which point the current is distributed throughout the grounds.

The Fort Wayne Electric Company makes a fine exhibit in Section M, with a commercial lighting station in full operation. It shows to the public exactly what should go into a regular station to meet any and all demands for service. Direct current dynamos for arc lighting, and incandescent alternating dynamos for the same service, and lamps of both kinds massed so as to give the investigator ample opportunity to investigate the workings of both systems. The utility of the electric motor for factory service is also strikingly illustrated, as, in place of a steam engine, two motors take their places and furnish the power to run the machines on exhibition. One of the features is a new type of alternating machine,

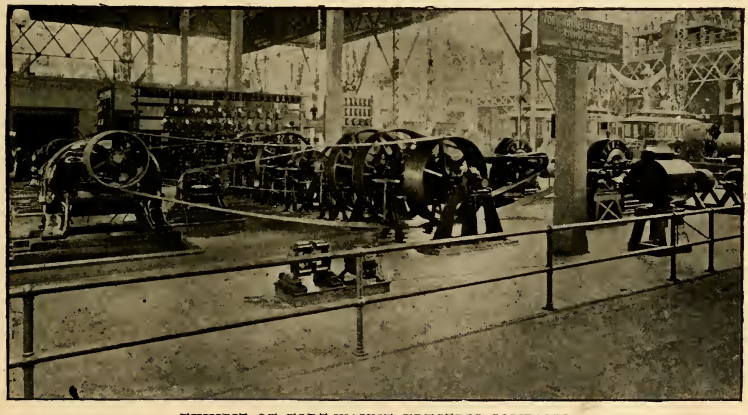
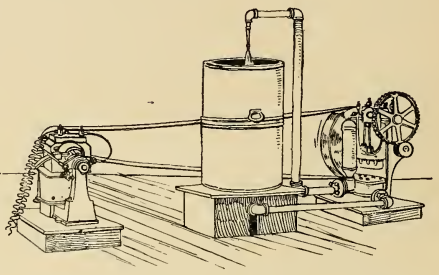


EXHIBIT OF FORT WAYNE ELECTRIC COMPANY.

the latest design of James Wood. Its peculiarity and merit is in its size, which is very small for its capacity. Its speed is also very slow, and these two features alone would commend it to the expert.

The General Electric Company makes a classified display of its

various productions. This company occupies eight distinct blocks of space in the centre of the ground floor, and each block contains a distinct type of apparatus. In one are shown railway appliances and motors under the head of power transmission. Here are shown power generators of the latest and largest types, railway trucks fitted with motors and electric air brakes; the various pieces of apparatus used for equipping a street railway system, including everything from the roadbed to the head light for the cars; cranes fitted with motors for lifting and handling heavy freight, and motors for every kind of service great or small. In another block is shown an arc lighting station operated by a huge motor with an elaborate system of shafting under the floor, and which furnishes arc lights for a large portion of the Electricity Building.



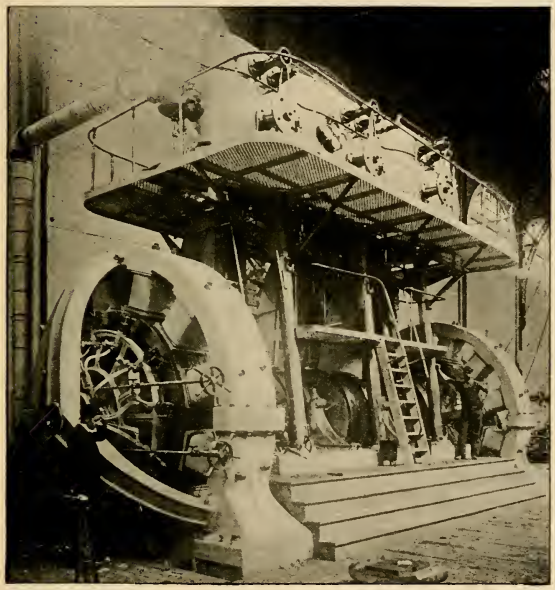
ELECTRIC MOTOR USED WITH FORCE PUMP.

In an adjoining block is shown alternating current apparatus, the most prominent feature of which is a large direct connected dynamo and engine. Search lights of all kinds and marine signaling apparatus are displayed, together with the latest developments in this line made by Prof. Thompson.

The display in the next block of Mr. Edison's lamps and system of lighting is one of the greatest interest. Incandescent lamps ranging from a power of ¼ of a candle to 250 candle-power, and examples of all his lamps from the very first to the latest, are shown, as well as all of the materials for and the various stages of their manufacture. In several cases are shown samples of all the fibrous materials used in the experiments which led to the adoption of Japanese bamboo, as the material to be used for the filament of the lamp. These experiments alone cost Mr. Edison a quarter of a million of dollars. Here also is shown the first direct connected

engine and dynamo, the design of Mr. Edison. This identical machine was exhibited at the Paris Exposition of 1890, where it created a veritable sensation. It has been in constant use since, and is still capable of good service.

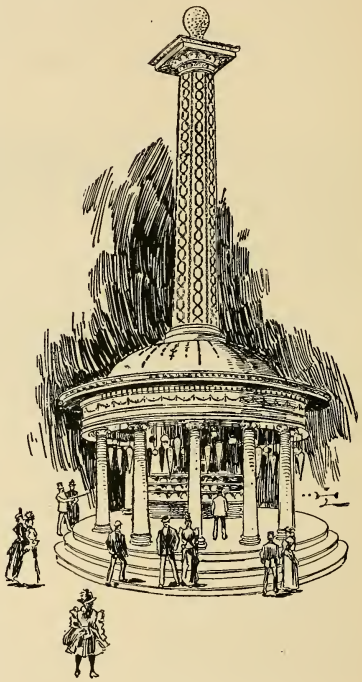
The next block shows the apparatus used for isolated stations, such as are found in large hotels and office buildings. Some very fine designs for utilizing the usually very cramped space allowed in such buildings are shown.



1,500 HORSE-POWER DYNAMO.
Exhibit of General Electric Company.

The adjoining block shows the application of electricity to mining, and exemplifies how electricity can replace in every way the use of steam or compressed air, utilizing, by the way, what has been a source of the greatest trouble to mine owners, and that is the water found in mines. Here is shown the Pelton water wheel operating a dynamo which produced a current of three hundred volts. This is transformed to a voltage of 6,000, and at the mine is reduced again to whatever voltage is necessary for safe use. Mining pumps for draining mines, drills, mining railways, and in fact all apparatus used in modern mining practice is shown in operation and all operated by electricity.

In the centre of the building the "tower of light" is intended as the glorification of the Edison lamp and the Edison system of incandescent lighting. It was designed by Luther Stieringer for the General Electric Company, and the plans were approved by Mr. Edison. The tower is 82 feet high and arises from a circular pavilion 32 feet in diameter. The glass exhibit in this pavilion is made by the Phœnix Glass Company, of Pittsburg, and is grouped in the space between the base of the column, which is polygonal and faced with mirrors, and the circular row of columns supporting the roof of the pavilion. Above the pavilion is a graceful cylindrical shaft of staff, ending in an elaborately ornamented gilded capital. The surface of the shaft is relieved by dark lines of moulding, arranged in geometrical designs, as shown in the illustration, with little six candle-power lamps of different colors inserted at frequent and regular intervals. Surmounting the capital of the shaft is the crowning feature of the tower. This is the great prismatic bulb, composed of about 30,000 pieces of cut glass, arranged on a stout frame work in the shape of an incandescent lamp. The lamp is eight feet high and four feet in diameter at its greatest width. The prisms are made of cut glass and are only three-quarters of an inch in diameter. To place each one in position required the services of two men, one working inside and one outside of the bulb frame. The frame is made of angle iron and covered with a wire



THE "TOWER OF LIGHT."

hood, the shape of an incandescent lamp. The prisms were attached to the outside of the wire hood, and it took eight men five weeks to construct the bulb. Each prism was fastened with copper wire in order to avoid corrosion, this being the best metal for such purposes. The weight of the bulb completed is 1,000 pounds. The tower is handsome and impressive when not illuminated; but at night, with its 5,000 little points of light in red, white and blue, and the great bulb, lined with incandescent lamps of ordinary size, flashing and scintillating in every direction, the effect is very striking and beautiful. The lamps on the shaft are wired in such a manner that the designs formed by the lines of light can be changed at will. The "tower of light" will linger in the memory of the visitor as one of the beautiful spectacles at the Fair.

In the German section of the Electricity Building the largest and most varied private display is made by the Allgemeine Ellektricitatts Gesellschaft of Berlin. The exhibit of this firm is on the ground floor in Section D, and covers a floor space of about 1,600 square feet, and is completely filled with the multiform applications produced by this important company. An elaborate scheme of power transmission is shown beginning with a 60 kilowatt multipola motor, wound for 500 volts, directly belted to a three-phase dynamo. The motor, which is operated by current from Machinery Hall, is designed for 500 revolutions a minute, and its field magnets are of cast iron, cast in one piece with foundation plate. The armature is of the drum type, and consists of one layer of copper bars of rectangular section. The dynamo driven by this motor produced three alternating currents of a phase of 120 degrees difference. It has a capacity of 72 kilowatts at 428 revolutions, the potential being 120 volts. A conspicuous feature of the exhibit is the large stage lighting regulator, by the use of which it is claimed that any lighting effect needed on the stage of a theatre can be produced. All the mechanism needed for producing light of different colors and intensity is combined in this appliance. There is also a large display of elaborate devices for the charging and discharging of accumulators, a branch of electrical practice in which Europe is far ahead of America. The exhibit of arc and incandes-

cent lamps, fixtures, house goods, switches, fuses, cut-outs, lightning arresters, sockets and other goods entering into the output of a general electrical manufacturing house is very large and comprehensive, and cannot here be described in detail. It may be mentioned that the annual production of the company in incandescent lamps is said to reach 1,500,000. A special table is devoted to showing the processes necessary for the manufacture of these lamps. Among the special electrical applications shown are hair curlers, glue pots, cigar lighters and electric clocks arranged for connection with ordinary incandescent circuits, by which they may be kept constantly wound up and regulated from the central station. At a pillar in the middle of the exhibit several of these clocks show the time in different cities.

In the French section the display of the Bureau de Posts et Telegraphes is exceedingly complete and interesting, containing as it does many objects of historical interest. Controlling, as the government does, the telegraph and telephone, every form of apparatus used is shown. The Societe Gramme shows M. Gramme's first dynamo, exhibited at the Vienna Exposition of 1873. Some very fine examples of modern lighthouses are shown in actual operation, fixed lights and one lens, the largest ever made for a flash light. These lights are shown at night illuminated, and are very attractive.

The Japanese Government shows its advancement in electric science by a display of electro-Seismographic apparatus used in recording the direction, force and vibratory movements of earthquakes. It is a noteworthy fact that in this line Japan has taught a lesson to the more advanced scientific nations, for they have originated the apparatus necessary, and other nations have copied them extensively without being able to even suggest any improvements thereon. In the matter of artistic forms of electroliers for incandescent lighting the exhibits of bamboo fixtures are unique and handsome.

E. S. Greeley & Co. make a fine exhibit of telegraph instruments and appliances for the household. The "Victor" key of gold and ivory with which President Cleveland started the

machinery on the opening day of the Exposition is a feature of the display.

Some of the best and most novel displays are located in the

EXHIBIT OF E. S. GREELEY & CO.

gallery. Gray's Telautograph, or writing machine, excites great interest not only on account of its novelty, but because of its accurate applicability to uses hitherto undreamed of. Not only can autograph messages be sent, but checks can be signed at a distance and drawings can be sent for newspaper use with the certainty that whatever is written or drawn on the sending instrument

it will be faithfully reproduced at the receiving instrument in its most trivial detail.

The North American Phonograph Company makes a fine display of Mr. Edison's pet machines, and exhibits a number of historical instruments which show the development of the machine from the beginning. Instruments for use in the office to replace the stenographer, machines for the school and instruments for the house or public entertainment are here in great variety. One type of phonograph is capable of giving an entire opera, each act being recorded on a separate cylinder. Mr. Edison's Kinetograph, a combination of the Phonograph and Stereopticon, will not only record and deliver a speech, but shows the speaker on a screen, faithfully reproducing his every movement and facial expression.

The Ansonia Electric Company shows a full line of electric household utensils, and has a trained cook to show their practical operation. Frying, baking, boiling, stewing, ironing, etc., are shown, and the toothsome results are distributed to show that electric cooking and heating is not only a possibility, but a process that is as cheap, if not cheaper, than the old method, and far more satisfactory and cleanly.

The Western Union Telegraph Company makes a collective display, which contains many objects of the highest historical value. The receiving instrument of Morse, which he used in 1837, the first recording telegraph ever made, is here. A model of the steamship Great Eastern, which was used so extensively in completing the Atlantic telegraph, the grapnel used to recover the first cable after it had parted in mid-ocean, and numerous exhibits from the collection of the late Cyrus Field are in this display.

The Commercial Cable Company also has a unique exhibit of the instruments used to operate the modern cable, and visitors can send and receive messages over a line which exactly represents the largest of the Atlantic cables.

W. R. Brixey shows in a very handsome manner insulated wires and cables of all kinds—deep sea, underground, telegraph and telephone. The feature of this display is rubber from the tree to the

cable, showing the actual rubber tree growing and crude and manufactured rubber in every form and stage of process.

Electric heat applied to the incubator for hatching poultry is pleasingly shown by H. W. Axford. Not only does electricity replace the brooding hen, but cares for the motherless chick after the process is completed, and does it in a manner that is precision itself. A strange fact is that electricity does in 19 days what the hen requires 22 days to accomplish, and with more certainty.

A machine for use in large clothing factories, and which can cut with absolute precision through 36 thicknesses of cloth, thus making 36 suits at once, and doing the work of twice that many hands, is shown by the Electric Cloth Cutting Machine Company.

A machine which excites the attention not only of the jewelry fraternity, for which it was specially designed, but of other engravers as well, is an automatic engraving machine, by which any wood-cut, letters, either sunken or raised—in fact, anything in relief or in intaglio—can be transferred to metal or other surfaces with absolute fidelity. It is shown by the National Automatic Engraving Machine Company. A pointed metal contact stylus passing over the lines of the object to be engraved or transferred by an electrical device causes a corresponding motion in the graving tool of the machine as it passes each line of the object to be reproduced, and thus the reproduction is made.

France shows an electrically operated piano, which consists of an attachment that can be placed on any piano, and by turning a switch any desired selection will be produced in a masterly manner.

Germany, in the gallery, has a beautifully decorated space showing the historical features of electricity in Germany, which tell largely the life and history of Von Siemens. The first dynamo ever made is here shown, as well as numerous other inventions of that wonderful genius. The display of the postal, telegraph and telephone departments of the German government are strongly representative of those branches, and illustrate by means of models and diagrams their development.

Another exhibit that excites interest is a nickel-in-the-slot ma-

chine, operated by motors, that furnish a "shine" for one's boots, and does the work very thoroughly.

Besides these will be found in endless profusion exhibits of wires and cables, copper in all forms for electrical purposes, instruments for measuring the current in various ways, and motors, push-buttons and bells—in fact, every known appliance for any and every purpose. In truth, it can be said that a house could, from the contents of the Electricity Building, be so completely equipped electrically that there would not be the slightest necessity for lighting a match in it from one year's end to the other. Moreover, this house would be a marvel of comfort, and would be luxurious beyond all desire.

COOKING BY ELECTRICITY.

Perhaps another "electrical exhibition" a decade hence would show as great an advance over the present one as it does over the Centennial. While this seems impossible, every one will admit

that the applications of electricity are still in their infancy, and the coming generations will certainly see wonderful advances in this science of "chaining the lightning and harnessing the thunderbolt."

J. P. Barrett

Art Palace
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Fine Arts.

THE Building of all in the World's Fair which has received the highest encomiums from architects, as well as laymen, for its classical beauty and grace is the Gallery of Fine Arts. It is regarded as having reached the anticipations of those who are aware that in all World's Fairs it is intended to make the Fine Arts Building a perfect example of each nation's taste and progress in architecture. Such a building must be more solidly built than the others. It must be as nearly fire-proof as possible, or it would be impossible to induce painters, sculptors and owners of the finest art works to send their treasures to it. As a result it follows that this one among all the buildings is oftenest preserved as a memorial of the past Exposition and as a permanent monument of the art progress of the nation which has managed the Fair.

The task of designing this building at the Columbian Exposition was given to Charles B. Atwood, of New York, the designer-in-chief of the Exposition. Out of all the architects participating in the construction of buildings his work has been awarded the palm.

The exterior is of the pure Ionic style, the details having been carried out in the strictest and most academical manner. The proportions of the work have been adapted from those of the famous temple of the Erechtheum at Athens, but the composition of the general masses of the building has been treated with freedom after the manner of the Academie des Beaux Arts; but though Mr. Atwood has made the building as scholarly as possible, it is as impressive to the layman as to the critic. The main structure is 500 x 320 feet, and there are two annexes each 136 x 220 feet. These are connected with the central pavilion by colonnades. The

walls are of brick and the roof of iron, so that the edifice may be considered of a permanent character, and all risk of harm to the works of art is reduced to a minimum. In the colonnades and great entrance loggias are sculptured friezes after the manner of the frieze of the Parthenon at Athens. On the attic story of the great entrances are heroic statues representing the arts and sciences. Between these and the panels are portrait busts of the masters of art, while crowning the dome of the main pavilion is a great winged figure of Victory. All about the exterior colonnades are replicas in large size of the most celebrated antiques.

The interior of the main building contains a court 100 feet wide running north and south, and crossing one of the same dimensions lying east and west. At the point of intersection of these courts is a great dome 125 feet high and 75 feet in diameter. In this tribune in the centre of the building are displayed a few of the best works of sculpture. All the sculptural display is arranged on the ground-floor of these great courts. Around these courts run galleries 24 feet above the floor, 20 feet wide, and lighted by great central sky-lights. Under these galleries in alcoves are displayed all the sculptural bas-reliefs and casts of architectural remains. In the gallery floor, on the walls and on cross screens are displayed all the architectural plans, the etchings, photographs and prints shown in the building. The picture galleries are all arranged in the four angles of the building. They are 30 feet in height, and average 30 by 60 feet of floor space. In the annexes the easterly pavilion is entirely occupied by the French collection. The American section, which is in the angle of the main structure nearest the French pavilion, exhibits all the notable French paintings owned in America in a corridor connecting with the pavilion. The westerly pavilion is occupied by several of the foreign peoples whose collections are much smaller. In the main structure outside galleries 40 feet wide form a continuous promenade. Between the promenade and the nave are small rooms devoted to private collections of paintings and various art displays. Grand flights of steps lead up to the richly sculptured great portals, and the walls of the loggias of the colonnades are gorgeously adorned with mural paintings illustrat-

ing the history and progress of art. This building has one of the most ideal locations of all on the grounds. It is situated at the south side of the most highly improved portion of the Park, and just south of the group of State buildings. Its south front faces directly upon the north Lagoon. It is separated from the Lagoon by beautiful terraces ornamented with balustrades, with an immense flight of steps. From the main portal there is a landing for boats, and the view from these steps is an exact reversal of the beautiful one from the colonnade connecting the buildings for Agriculture

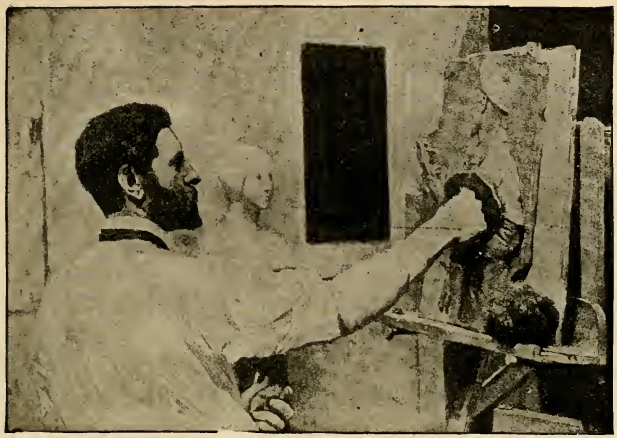
THE SECRET. (*Sculpture by Theo. Baur.*)

and Machinery, but it differs from that in having for a prospect the Wooded Island and the beauties of nature instead of the magnificent display of architectural art around the Grand Plaza and Basin. To the north of the main structure and between the annexes lies a great open lawn, and across it the observer looks toward the group of State buildings. The immediate neighborhood of the Gallery of Fine Arts is ornamented with groups of statues, replicas and ornaments of classic art. It is a favorite resort.

Much fear was expressed during the first preparations for the Exposition that the department of Fine Arts would be the weakest

of all. It was said that the location of the Exposition at Chicago was immensely unfavorable to the prospects for a fine display in this line. It was said that Europe would not contribute its art collections, or any considerable portion of them, for the reason that Chicago was generally believed abroad to be a city far removed from the centre of education and culture in the United States. This point was raised, however, by persons who underrated European knowledge of the city chosen for the great Exposition. By no class was the selection of Chicago received with more satisfaction than by those interested in the development of art, and it soon became evident that the choice of that city was not only received favorably abroad, but actually with more satisfaction than if New York had been selected. From the very first the efforts of Halsey C. Ives, chief of the department of Fine Arts, have been received with encouragement, and have been marked by pronounced success. Interest and cordial co-operation were secured everywhere, and the results show in the building. The plans for the annex were enlarged, and though nothing except the best have been admitted, every available space is crowded with the art treasures of the world.

From the very fact that in this building were to be displayed the art treasures of the world, there was less attempt toward ornamentation by mural decorations and sculpture than in some of the other buildings. Nevertheless, there are many notable features of sculpture and painting designed for ornamentation of the building, as well as the host which are exhibited. Surmounting the dome is a colossal statue of the famous figure "Winged Victory." Above the principal entrances, and upon the exterior frieze, are portraits of the old masters, and sculptured bas-relief decorations. Other sculptures of Martiny are upon the friezes of the building. "Architecture" is a chaste figure with a stern yet not unpleasing face denoting intellectuality and study. The lines of her drapery are simple, and altogether different from the flowing robes of the voluptuous one representing "Painting," every curve and line of whose face and figure speak of gaiety and sensuousness. "Music" is pensive and poetic, her beauty somewhat overshadowed by the melancholy

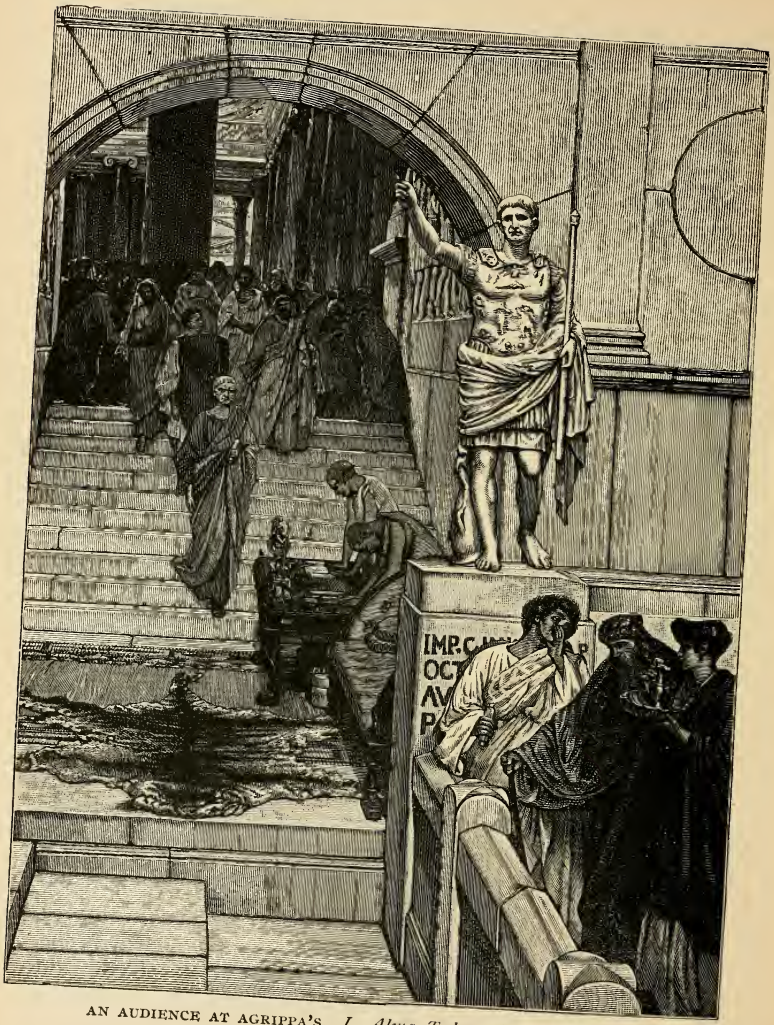


PORTRAIT OF AUG. ST. GAUDENS. *Kenyon Cox* (*U. S.*).

cast of her features and the drooping lines of her figure. "Sculpture" is more vigorous and robust than the other sisters, and her face and figure are characterized by superior strength and firmness. On either side of these figures are two large winged female figures holding garlands of flowers. There are two female figures on each side of the main entrances supporting the pediments to right and left of doorways. These entrances are guarded by large lions, one on either side, designed by Theodore Baur and A. Phimister Proctor.

THE GOLD FISH. *Fred. W. Freer* (*U. S.*).

The groups included in the classification of the



AN AUDIENCE AT AGRIPPA'S. *L. Alma Tadema* (*Great Britain*).

Fine Arts Department are as follows: Sculpture; Painting in oil;

Painting in water-colors; Painting on ivory, enamel, metal, porcelain or other wares; fresco-painting on walls; Engravings and etchings; Prints; Chalk, charcoal, pastel and other drawings; Antique and modern carvings; Engravings in medallions or in gems, cameos, intaglios; Exhibits of private collections.

In this building there are such vast numbers of exhibits, all worthy of careful inspection, that the visitor needs to be very industrious who manages to see even the most noted pictures and statuary. There have been few previous occasions when a collection of such size and uniform merit has been gathered. In the main building alone there are seventy-four galleries, varying in size from 30x30 feet to 36x120 feet. The four large courts and rotunda of the main building and the rotundas of the annexes are devoted to sculpture and architecture, so it is comparatively an easy matter to locate everything of importance in these branches. But as the wall space is immense, there is, of course, a greater difficulty experienced in finding any special painting. For the exhibition of architectural designs, engravings, etc., there are reserved eighty-eight alcoves, twenty-

THE STRUGGLE FOR WORK. *By J. Gelert.*

eight fronting on the main floor of the east and west courts, and sixty on the second floor gallery.

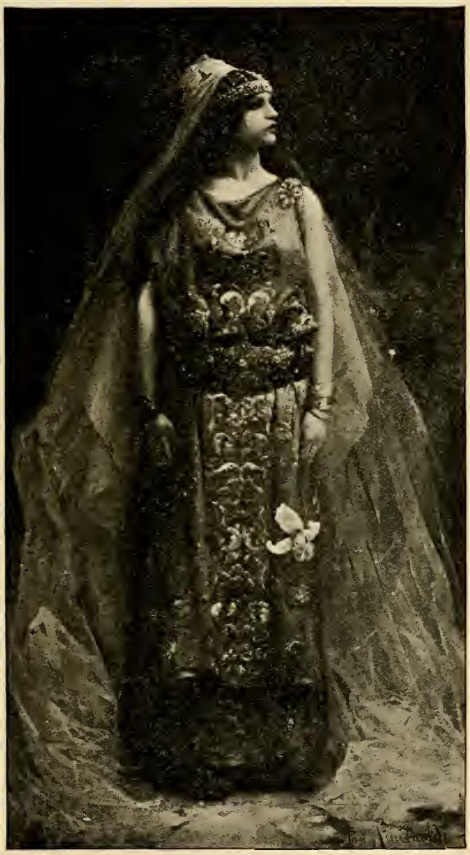
The allotments to the different nations are as follows: The space in the northwest corner of the building, bounded by the north and

COUNTRY FAIR IN MORA, SWEDEN. *Anders L. Zorn*, (*Sweden*).

west courts, has been given to Germany and Austria for statuary and oil paintings, with the adjacent gallery space for water-colors and drawings. France has the entire space in the east pavilion or annex, except the westerly series of galleries contained in it. Italy, Sweden, Norway and Denmark occupy the west pavilion or annex. Russia, Holland, Japan, Spain and Mexico have the southwest corner of the main building, bounded by the west and south courts. Great Britain, Canada and other English possessions have the southeast corner, bounded by the south and east courts, and the United States has the northeast corner, bounded by the north and east courts, with space in the southwest gallery for her architectural drawings. Miscellaneous paintings and drawings are to be found in the galleries other than those mentioned as allotted

to German water-colors and drawings, and American architectural drawings.

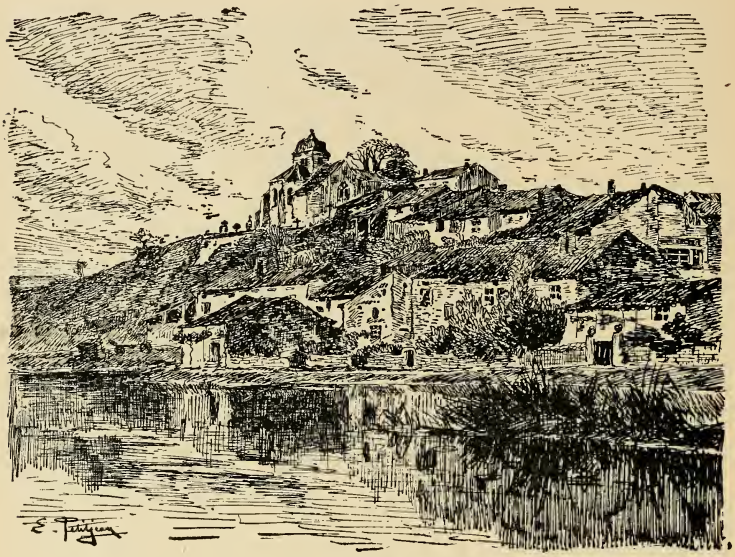
Keeping in mind this distribution of space, one may easily find any statue or canvas he may desire to examine, as the art works of French artists are found in the French section, of German artists in the German section, etc. Loan collections, which consist of the works of artists of various nationalities, are amassed together in the space devoted to such collections in the United States section, regardless of the nationalities of the artists.



DAUGHTER OF THE RAJAH. *Paul Sinibaldi* (*France*).

In the German section many beautiful statues and groups of statuary are to be found, among which the following are some of the most notable: in room 30 in this section is the bronze figure, "The Messenger from Marathon," by Max Kruse; and the "Fisherman and Mermaid," also bronze, by Unger. In room 34 are also several very fine

bronzes, and in 33 is "Saved," by Adolph Brutt, representing a sailor in his rough garb carrying the figure of a young woman. This is a bronze. "Eve," by the same artist, represents a



VILLAGE IN CHAMPAGNE. *Edmond Petitjean* (*France*).

woman with two children in her arms (Cain and Abel). "The Devil Catching Flies" is particularly Germanesque in treatment. The artist is Somner. Herter shows a "Triton Catching a Mermaid." Siemering has a strong figure typifying "Peace." Heiderrich exhibits two hunting groups, "In the Open Field," and "Badger Hunting." In painting, it is hard, when all are excellent, to select one more deserving of mention than another. Still we venture to name a few. Schlabitz has a beautiful "Church Interior," and Norman a fine lake and mountain view. Wimmer's portrait of William II. is excellent, and a large nude figure by Stockinger is well drawn and colored. The same can be said of a partially nude female figure by Schauss. An "Interior Scene," by Fischer-Corlin,

is good, and two marines by Bartels are excellent. Lespering's "Sick Girl" is quite a gem, and Von Stettin's "Italian Boys in Paris" is particularly strong in color and drawing. A small "Interior" by Weimer is a gem, as is another near it by Albert Flamm. In room 34 Bohrdt's "Marine" to the right on entering is magnificent, and nearly as good is the "View on the Beach," hanging just above it. Gude's "Marine" is also fine, but the most attractive picture in the room is Papperitz's "Daughter of Herodias." Hildebrand's immense canvas "Tullia Attempting to Drive her Chariot over the Body of her Murdered Father," is very strongly drawn and painted. In room 33 perhaps the best canvas is Volz's "Mary," though its setting in excessive green detracts from its beauty. "The Nun," by Hoecker, is good, as are the "Death of Dante," by Freiderich; "Flag of Truce," by Speyer; "Chamois Hunter" and "Rafting on the Isar River," by Karl Knabl;

PROF. MOMMSEN. *Ludwig Knaus* (*Berlin*).

"Fishing in Norway," by Ekenas—these are all from Munich; "Near Naples," by Achenbach; "Alone," by Alberts; "Village in the Spessart," by Andorf; "Still Life on the Game Preserve," by

A COUNTRY FESTIVAL. *Ludwig Knaus* (*Berlin*).

Arnz; "The Wedding Morn," by Bachman; "The Martyr's Daughter," by Baur; "The Cigarette Factory," and "On the Heights," by Von der Beck; "The Vidette," by Carl Becker; "Sinai," by Bracht; "The Surprise," by J. von Brandt; "Industrious Sisters," by Crola; "On the Brook," by Deiter; "Summer Evening," by Duecker; "Italian Women at Fountain," by Flamm; "Vaccinating Office," by Gabl; "Dante on the Alps," by Hertel; "Queen Louise," by Hildebrand; "North German Landscape," by Malchin; "Summer Night," by Normann; "The Flood," by Scherres; "Landscape on the Riviera," by Turecke; "At the Sick Bed," by Vautier; "The Berlin Congress," by Von Werner; and many portraits. The above-named paintings display the merits of

UNITED STATES.—THE COUNTY FAIR. (*E. L. Henry.*)

every school of painting in the empire, nearly every city of note being represented. In portraits, that of Professor Virchow, by Lehnbach, is probably the best of the collection. "Spinners" is excellent. "Sheep," by Zugel, and "Cattle," by Baisch, are fine paintings. In room 33 Branswetter's "Christ" is an exceedingly strong painting, as is "The Rolling Mill," by Menzel. Lehnbach's portrait of Pope Leo is above criticism. Gysis' "Carnival in Greece" is a charming composition. In room 31 the strongest works are "The Review," by Schmidt; "Balancing the Egg," "A

THE ROLLING MILL. *Prof. A. Menzel (Berlin).*

Portrait," by Lehnbach; "A Winter's Landscape," by Hildebrand, and the "Congress of Nations," by A. Von Werner. In room 30 are a fine marine and river view, a desert scene, and a mountain landscape.

In excellence but few, if any, of the exhibits surpass that of Austria. In room 36 are five panels by Hans Makart, representing "The Five Senses." These are fine nude female figures, and in drawing and colors are unsurpassed. "Never Returns," by Payer,

is a strong though sombre canvas. Other fine pictures are: "Equestrian Portrait of Washington," by Huber; Von Bloss' "Children with Orange;" Bacher's "Mother of Christ;" a "Landscape," by Russ; a "Portrait," by Temple; an "Interior," by Probst; "Sunday," by Brozik, and a "Landscape," by Fischer. In room 35 is Brozik's magnificent picture, "The Defence of Prague;" Hinchl's "Prometheus;" Knupfer's "Mermaid and Man;" Von Deffrigger's "Men and Girls Drinking:" Schmid's "Suffer Little Children;" Wertheimer's "Vinion;" Muller's "Market Place at Cairo," and Deutsch's "Egyptian Interior;" "The Cemetery in Dalmatia," by Schindler; "The Hunting Master," by Canon; a portrait of William Unger, by Temple; and two portraits by Unger, "Rembrandt" and "Reuben's Son." Mme. Wislingen, Austria's most famous woman painter, sends "Morning at the Seashore," "Breakfast in the Country," and the "Laundress of the Mountains." The

PRINCE BISMARCK. *Prof. Von Lendenbach (Munich).*

"First Court of the Hussites," by Brozik, may be seen in the north alcove of the Austrian space, close by a heroic statue of the Emperor. Portraits of members of the royal family, by Victor Tilgner, the court painter, have been sent by the Emperor Franz Joseph himself. Hans Makart, the most celebrated painter of Austria, contributed five scenes. The microscopically small paintings of A. Pazmandy, a Hungarian artist, are very curious—one, "The Landing of Columbus," is half an inch square, and contains seventeen human figures, besides boats, sea, land, etc. They are highly finished paintings.

The French claim, and it seems justly, to be the successors to the ancient Greeks in the art of sculpture. In their section the display is superb. One group represents a "Combat between a Lion and Crocodile;" "Mercury," a beautiful small bronze; "The First Funeral" (Abel's); "The Return," a bronze relief; "Egyptian

HARD TIMES. *Herbert E. Butler* (*U. S.*).

Harp Player," bronze; "The Suez Canal;" "Jezebel Torn by Dogs;" "David's Triumph;" "Age of Iron;" "The Age of Stone;" "Genius of the Grave;" "Earth;" "Ninon;" "The First Sin;"

UNITED STATES.—LAWN TENNIS PARTY. (*Orrin S. Parsons.*)

"Source of the Seine;" "The First Corn," and "The Blind Carrying the Paralytic." Probably the most intense work in this exhibit is "The Bullet in the Head," an old woman holding in her lap the dead body of her grandchild, killed during the Coup d'Etat. Other fine ones are Aube's "Dante," a marble statuette copied from the original bronze figure which stands in front of the College of France; Fremiet's "Jeanne d'Arc," the "Gorilla;" Chapu's "Joan of Arc;" Rodin's "Les Bourgeois de Calais;" Falguire's "French Republic;" Idrac's "Salammbo;" four figures from the Lamericiere Monument, by Dubois; two groups by Mercie; Cain's "Attack of the Tigers;" Berria's famous "Child Mozart."

THE OPEN SEA. *Walter L. Dean (U. S.).*

In the French exhibit there is also a magnificent display of historic sculptures, consisting of a collection of casts, duplications of the most important reproductions of works shown in the Museum

of Comparative Sculpture, in the Trocadero Palace in Paris.

BASILISSA. *Joseph Wenckler* (*France*).

These casts show portions of the façades of churches and cathedrals, grand portals, beautiful galleries, altars, statues, columns, capitals,

etc. They are as perfect as the highest degree of French art and skill can make them, even the time-worn appearance of the originals being faithfully reproduced. These replicas are not reduced in size, and consequently some of them are very large; one, 41 x 24 feet, shows a portion of the Church of St. Giles; one, 20 x 36 feet, is from the gallery of Limoges Cathedral; one from the "Portal of the Virgin," from Notre Dame, Paris, is 18 x 25 feet, etc. The architecture and sculptures represented begin with the art era of the twelfth century, and are followed down to the seventeenth century era continuously, the examples chosen as follows: The Cathedrals of Chartres and Bourges (12th); Paris, Rheims, Amiens, Lyons, Rouen and Laon (13th); Bordeaux, Nantes and Sens (14th); Mans (15th); Beauvais, Limoges and Tours (16th); the churches of St. Giles, St. Trophime at Arles; St. Martin at Brive; St. Euthrope at Saintes, and Notre Dame du Port at Clermont-Ferrand (12th); St. Denis and St. Croix at Nievre (13th); St. Maclou at Rouen (16th); St. Nicholas and St. Jean at Troyes (16th); the cloisters of Moissac (12th); the

PROF. VON HELMHOLTZ. *Ludwig Knaus (Berlin).*

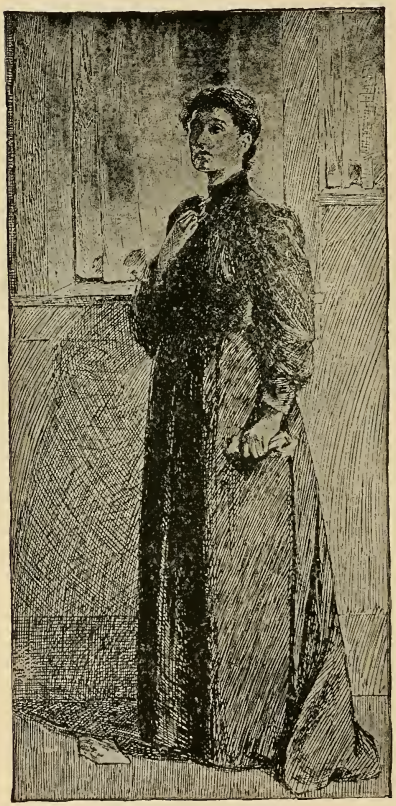
Chapel of St. Germer (13th); the Chateau of Lude (15th); and Gaillon (16th); the Hotel de Rohan, Paris; the Palace of

UNITED STATES.—THE HUNT BALL. (*Jules L. Stewart.*)

Versailles, and the Hotel de Ville of Toulon (17th). The "Christ of Amiens" shows the height to which the sculptor's art had risen in the medieval ages, and though there was later a decadence from such sublime ideals and execution, yet the gallery of the Cathedral of Limoges, wrought in the sixteenth century, during the reign of Francis I., shows a Renaissance. The tomb of Louis de Breze, husband of the famous Diane de Poitiers, and the door and doorways of the Church of St. Maclou, of Rouen, are fine examples of the sixteenth century Renaissance. The French government has kindly presented to the American people a large number of these casts, with the understanding that they are to be placed in some American art museum. This grand collection was obtained chiefly through the exertions of Prof. Halsey C. Ives, director of the St. Louis Museum of Fine Arts, who is also chief of the Department of Fine Arts of the Columbian Exposition.

In paintings, the artists represented and the subjects treated by

them would require a catalogue nearly as large as this volume to merely name them, and even in the briefest manner note their peculiarities and beauties. In the French section are found, among hundreds of first-class canvases, the following, of world-wide celebrity: Dagnan Bouveret's famous "Conscripts;" the "Prisoner" and "El Bravo Toro," by Aime Morot; the "Capture of the Dutch Fleet by French Hussars in 1790," by Delort; "Love's Captives," by Aubert; "Returning from the Vineyard," by Adan; "The Death of William the Conqueror," by Maignon; "A Baptism," by François Flemang; "Miners on a Strike," by Latouche; "The Twins," by Madam Demont-Breton; "A Blessed One," by Courtois; "President Carnot," by A. Yoon; "The Rehearsal," by Aublet; "A Hospital Scene," by Dauban; "Returning from Market," by Moreau; "La Paix," by Michel; "La Leda," by Souchetet; "Catharine de Russie," by Deloye; "Judith," by D'Aizelim; the Talleyrand "Portrait of Columbus." Near the east door is seen "Dawn," by Madaline Lenoir; Zuber's "Forest of Fontainbleau;" Weber's "Flessingue," and St. Pierre's "Saadia," gorgeous in tone and perfect in drawing. Rozier's "Fish Market," Wencker's "Blacksmith," and "Marat," by Saulies, are all good.



THY WILL BE DONE. *O. D. Grover* (*U. S.*).

23 GREAT BRITAIN.—DANIEL. (*Briton Rivière.*) 353

Guquet's "Madonna and Child," and Rixin's "Portrait of a Lady" (in the third room) are fine figure-pieces. Delacroix exhibits a beautiful nude figure, and Perairie a magnificent "landscape," on a very large canvas. Clairin's "Day on the Lagoon;" Berand's "Dead Christ;" "Blessing the Bread;" an old female figure, by Deully; a nude figure, by Axiletti; a female figure, by Bisson, and one by Brouillet; Adan's "Girl and Flowers;" Jules Breton's "Pardon of Kergoet;" Virginie Demont-Breton's "Bathing" and "Children

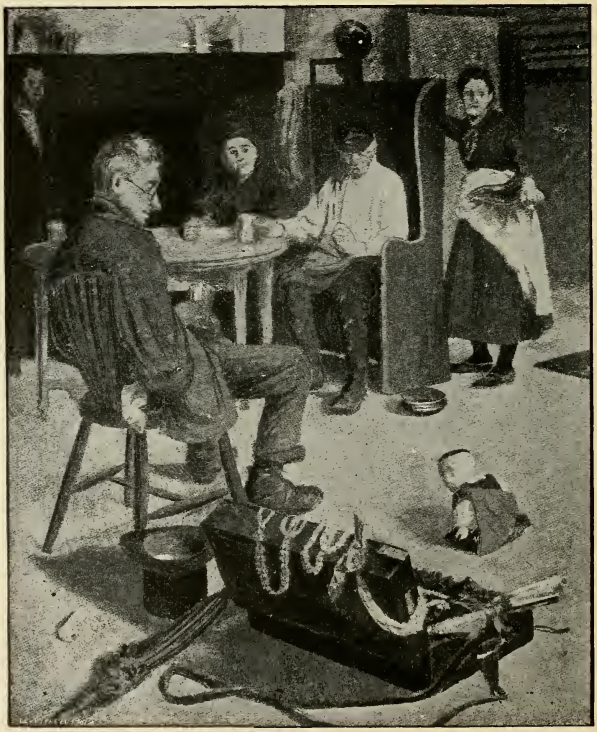
MENDING THE CANOE. *Douglas Volk* (*U. S.*).

and Dog;" Dantan's "Studio," and Benner's "Bear Hunters" are exceedingly fine. In the second room to the left of the entrance is Bonnat's "Portrait of Cardinal Lavagierie," the finest portrait at the Exposition. A "Girl Martyr," by Cave, in the same room, is very fine.

English artists exhibit numerous very fine portraits and landscapes, prominent among which may be mentioned "The Roll Call," by Lady Butler, the greatest English woman artist. This is loaned by the Queen, who also sends twenty-two portraits of members of the royal family. The original portrait of Pocahontas,

FRANCE.—PORTRAIT OF M. BOULANGER. (*Joseph Wencker.*)

painted in 1612, is sent by a descendant of the Indian princess. There are "The Sluggard," "Needless Alarm," "Bath of Psyche," and "Garden of the Hesperides," by Frederick Leighton; also "Hercules Wrestling with Death" and "Perseus and Andromeda," by the same artist. Others in this class are "Halcyon Weather," "Lingering Autumn," and "The Ornithologist," by Sir John Miller; "Dedication to Bacchus," "Roman Bath," and "The Sculpture Gallery," by Alma Tadema; "The Harvest Moon," "Return



GREAT BRITAIN.—THE PEDDLER. (*A. Chevalier Tayler.*)

from Plowing," "Only a Shower," and "Girls Dancing," by G. H. Mason; "The Maiden's Race," by Wegnin; "Love and Life," and

"Love and Death," by Watts; "The Church Door," by Burgess; "The Race for Wealth," by Thrift; "The River Road," by Murray; "Forging the Anchor," by Forbes; "Storm at Harvest," by Losinell; "Portrait of Earl Spencer," by Hall; "The Gentle Craft," by Marks; "Abington," by Cole; "The Last Muster," "Hen and Chickens," and portrait, by Herkimer; "Monmouth Pleading for His Life," by Pettie; "Daniel and the Magician's Doorway," by Riviere; "Under the Sea Wall," by Pointer; "Victorious," by Sir James Linton; "Sons of the Brave," by Morris; "The Reverie," by Moore; "Sea of Galilee" and "The Palm Offering," by Goodall, and numbers of others.

GREAT BRITAIN—PALM OFFERING. *T. Goodall.*

Belgium exhibits many notable works of art, among which there is only space to particularly mention: "The Avenue of Oaks," and "Winter," by Lamoriniere; "Martyrs," by Verhas; "Sheep," by Courtois; "An Interior with Figures," by Onderaa; "Nuns," by

Tytgadt; "Girls and Cherries," by Bource; "Emigrants," by Tarasyns, all in Room 63. In 64, "The Last Day of Pompeii," by Slingenmeyer; "The Bather," by Fischepet; "Souvenir d'Italie,"

AUSTRIA.—CHRIST AND THE WOMEN. (*Alexander D. Goltz.*)

by Leon Herbo; "Interior with Figures," by Brimm. In Room 65 the finest are a "Lake Scene," by Kegeljahn, and "Jalousie." These are very fine, as are the following in Room 66: Claus' "Cock Fight;" Oom's "Cupid in Ambush;" Bouvier's "Marine," and Maeterlinck's "Peace." In Room 67, Lefebvre's "Arab Encampment;" Verhaert's pictures; Roszman's "Female Figure," and Carpentier's "Children and Goat," are excellent.

Sweden contributes to the art display the following fine canvases: "Night on the Swedish Coast," "Evening," "Stockholm by Moonlight," "Misty Night on the Oise," River Landscape, "Morning on the Oise," and "View on the West Coast of Sweden," by Wahlberg; "The Forest," "Autumn Day," and "The Temple," by Prince Eugene; "Lap Running on Snowshoes," "Laps Catching Reindeer," and "Landscape with Laps," by Tiren; "Night," "Moonrise," "Dawn," and "Daylight," by Nordstrom. In etch-

UNITED STATES.—GROUP OF PAINTINGS—FINE ARTS BUILDING.

THE PRIMROSE WAY, *A. F. Brooks.* MOZART, *J. W. Dinsmore.* IN THE STUDIO, *Edgar S. Cameron.*

WHAT THE STORKS BROUGHT, *Miss P. A. Dohm.* LABOR, *J. H. Fry.* WHEN TWILIGHT GATHERS ROUND, *Arthur Dawson.*

ings, water-colors and engravings there are some very fine productions, and the sculptures are likewise strong.

In the Danish exhibit, among other paintings are the famous one of the royal family, by Tuxen, who also exhibits "Susanne and the Elders," and Matthieson's "Teamster and Horses" and "Imprisonment of Chancellor Griffenfeldt," both strong paintings, the latter exceedingly fine in drawing and rich in color. The artist is the Royal Commissioner at the World's Fair. Other fine ones are: Arbo's "Walkyrie;" Hyerdahl's "Bathers," and "Girl and Boy," all in Room 71. In Room 74 are Pederson's very oriental "Isaac Seeing Rebecca at the Well," a blaze of color; and "Moses Striking the Rock," by Jerndorff. In Room 73 are Zahrtmann's "Job and his Friends;" a "Marine," by Lacour; "Night on the North Sea," by Locher; "Marines," by Blacke; "Portrait of a Lady," by Kroger, and a "Marine," by Ornesen.

UNITED STATES.—AUTUMN MORNING. (*Walter L. Palmer.*)

In the Norwegian gallery, where forty-five artists are represented by one hundred and fifty pictures, a striking one is the very large canvas of Krogh, representing "The Discovery of Vineland

(America)," by Lief Erikson. Dirik's "Winter Scene at Sea," Strom's "Interior with Figures," Sindring's "Cattle," Munttie's "Winter Scene in the Village," and Wentzel's "First Communion Feast" are all good.

The collection from Italy is not large, but it contains some very

RUSSIA.—CHRIST AT THE HOME OF MARY AND MARTHA. (*Heinrich Siemiradski.*)

fine pictures. The Pope sends four copies of Raphael's masterpieces done in mosaic. There are two genuine "Madonnas," known since 1548; a portrait of Cardinal del Monte, from the Medici gallery; a "Madonna and Child," and "The Saints." Among the water-colors is the immense one of Aureli, "The Presentation of Richelieu to Henri IV." Gabrini sends fourteen canvases, the most important one a large painting of "The Landing of Columbus." The exhibit of statuary is very fine. "The Republic of the United States" and "Companions in Misfortune" are by Bistolfi; "American Mythology," and a statue of "Burns," by Appoloni.

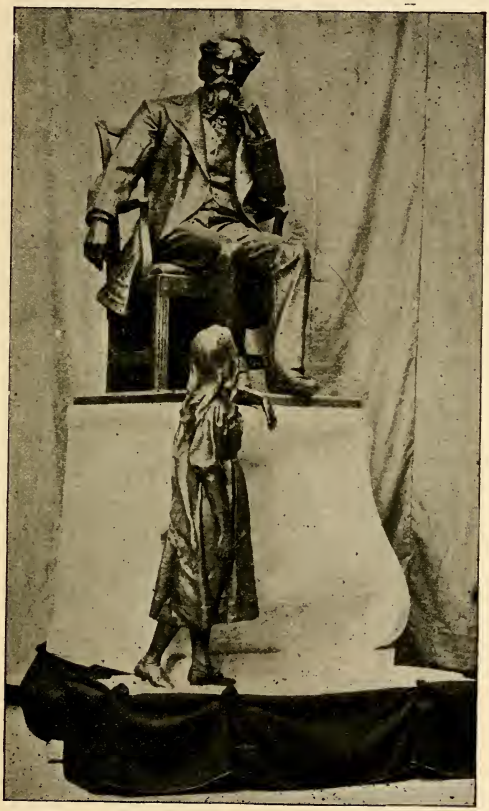
Holland, "the land of Rembrandt," sends a complete and characteristic collection. The dead painters, Mauve, Bosboom, and Artz —the greatest of her modern artists in rendering sheep and shep-

herds, church interiors and rustic life—are all represented by their works. On view are also the following: "At Anchor," "Ready to Sail," "In Danger," "Morning on the Shore," and "Summer Morning," by Mesdag; "Moonlight on the Rhine," "A Cottage," "Evening on the Heath," and "Still Life," by Mrs. Mesdag; "Alone in the World," "Sweet Home," "Fisherwomen at Zandvoort," "Summer Day on Shore," and "A Type of Fisherman," by Israels; "The Synagogue in Amsterdam," "The Dutch Reformed Church, Haarlem," and others by Bosboom: "Cows Going Home," "Carts on the Heath," "Pasture Near the Dunes," and "Plowing the Fields," by Mauve; "Between the Hague and Delft," "Fishing Shells," and "Canal at Rotterdam," by Jacob Maris; "Under the Willows," "Milking Time," "Dutch Pasture," and "The Duck Pond," by William Maris; "Girl Knitting," "The Pet Lamb," and "Girl Sleeping on the Dunes," by Artz; "Landscape with Cattle," "Cows on the Dunes," "Donkeys on the Shore," and "Cows Resting," by De Haas. Vos, Henrietta Renner, Mrs. Rosenboom, and others are represented. The largest canvas is "An Old Woman's Almshouse." "Poor People" is another strong canvas. Mr. A. Preyer, the Commissioner from this country, shows "The Angelus" and "Home Rulers."

Japan, whose people never made a display in the art section of an exposition before, gives one of the most unique displays in Chicago. It includes paintings in oil and water-colors on canvas, wood and silk, metal work, wood and ivory carving, tapestries, embroidery, lacquer work, enamel, and porcelain wares. One piece of tapestry, representing "The Gate of Nikko During a Festival," contains hundreds of figures and required four years for its completion. The Commissioners from Japan told Mr. Ives, the chief of the department, that they feared they could not meet the requirements of our classifications, so greatly did their art works differ from ours. His reply delighted them intensely. He said that he greatly desired them to make a presentation uninfluenced by any western rule or limitation, and that they might put any interpretation that they wished upon our classification. The result is that the Emperor permitted a display of works never seen out of his

country before. In delicacy, coloring and novelty these works are unexcelled and attract constant interest.

Brazil displays about one hundred and fifty paintings and a number of pieces of statuary. Among the latter is "The Christ" of Branado.



UNITED STATES.—DICKENS AND LITTLE NELL (BRONZE). *F. Edwin Elwell, Sculp.*

In the American section the display of paintings, statuary, drawings, etc., is bewildering in its riches and the immense number of subjects shown. American artists from Paris, Rome, and other cities of Europe, and from every part of the United States, are fully represented, and it is thus rendered extremely difficult to select from the innumerable canvases, all excellent in their lines, the particular ones most deserving of mention. In sculpture, Gelert's "Struggle for Work," "Theseus," and "Little Architect;" Bush-Brown's "Indian Buffalo Hunt;" St. Gaudens' "Logan;" Pardridge's "Shakespeare," "Hamilton," and others; Powers' (son of the great American sculpture, Hiram Powers) "Figure of a

FIRST FISH.
By F. E. Triebel.

Buffalo;" Miss Peddle's "Virgin Mary;" Bartlett's bronze "Bohemian Teaching Bear to Dance;" Tilden's "Bear Hunter;" Dollin's "Indian Cavalier;" Hartley's "Pan;" French's "Angel of Death and the Sculptor;" Nehau's busts, "Primavera" and "Portrait of a Lady;" Mrs. Shaw's "Family Group;" Boyle's "Stone Age;" Calder's "Cordelia" and "Boy with Ribbon;" Elwell's "Dickens and Little Nell;" Grafly's "Daedalus;" Kretschmar's "Aurora" and "Temptation;" Murray's "Bust of Walt Whitman." Triebel, a young sculptor, shows some fine work, "Mysterious Music," a bronze; "The First Fish," "Love Knows no Caste," and a bust of General Logan, that is excellent. His low reliefs of Donatello and Savonarola are very strong.

The architectural drawings, models, etc., are in such multitude that it is impossible to mention even the best of them, and the same is true of the oil-paintings, water-colors, etc.

To show the utter impossibility of giving even mere mention to the hosts of fine American paintings and other works of art, it is best to give the

reader some idea of their number, and this can be done by stating that, of New York's 1,350 paintings offered, 325 were accepted; Philadelphia presented about 600—139 accepted, etc. These of oil-paintings alone. Most of the noted American artists are represented, as Chase in "Marines;" J. G. Brown, known as "Gamin" from his paintings of street Arabs; Elihu Vedder, distinguished for his choice of weird subjects; E. A. Abbey, painter of genre subjects; William Hamilton Gibson, Peter Moran, Eastman Johnson, Swain Gifford, S. J. Farrar, Carl Marr, O. L. Warner, Blashfield Gari Melchers, George Hitchcock, Anna Lea Merritt, J. Alden Weir, John J. Borglum, Carrie Brooks, Enella Benedict, Fannie E. Duvall, Charles Heberer, John H. Frey, Laurie Wallace, Douglass Volk, F. Reagh, Winslow Homer, H. F. Farny, E. A. Burbank, Jules Guerin, Charles Corwin, Frank Fowler, Dielman, Stewart, Ida Waugh, and others.

THE LITTLE ARCHITECT. *By J. Gelert.*

The loan exhibits which have been gathered by Miss Hallowell are magnificent, comprising some of the finest works of the best masters—ancient and modern, American and European. These pictures have not been gathered into national groups, but have been hung solely with regard to the best effect of light and surroundings upon the paintings. Pictures by Constable, representing the

early English School; Diaz' "Descent of the Bohemians;" Corot's "Evening," from the Jay Gould collection; "Orpheus" and "The Flight from Sodom," by the same artist; a "Landscape," by Rosseau; Millet's "Pig Killers;" Delacroix's "Columbus at the Convent of St. Anne;" Decamp's "Job and his Friends;" Fromentin's "Audience with a Caliph" and "The Falconer;" Daubigny's "Cooper Shop;" Troyon's "Cattle and Sheep;" Meissonier's "The Lost Game;" De Neuville's "Spy;" Breton's "Colza Gatherers;" Mauve's "The Shepherd's Flock;" Ingre's "Cardinal Bompinni Presenting his Niece to Raphael;" Gerome's "Son Emmence Grise;" Tadema's "Reading from Homer," "The Beach

GREAT BRITAIN.—A READING FROM HOMER. (*L. Alma Tadema.*)

at Portici;" Fortuni's last work (unfinished); Puvis de Chavannes' "Summer," "Hope," and "Dawn;" Manet's "Dead Toredor;" Dega's "Ballet Girl;" Cazin's "Moonlight," and others; nearly every prominent artist in Europe and America being represented by his works, secured through the untiring efforts of Miss Hallowell.

It almost seems invidious to select out of this number a few for reproduction, but those which are pictured in the accompanying illustration are among the choicest specimens, and are worthy to be

UNITED STATES.—FORTUNY DEAD. (*S. J. Ferris.*)

thus chosen. Every day of the Fair proves that the American people sought such an opportunity for studying the art treasures of the world. The Art Building is the destination of thousands of visitors, and its galleries are always crowded by those who are thus imbibing the refining and intellectual influences. It is with a sense of deep gratification that the management of the Fair has observed this. It may be said that more enthusiastic appreciation of the department of fine arts has been shown than of any other department in the great Fair.

Soon after the Fair opened, steps were taken by the proper officials of the city of Chicago to provide a fund for purchasing and preserving this building after the Fair ends. At the present writing, it seems certain that the task will be accomplished, and that the Palace of Fine Arts shall remain as a permanent memorial of the World's Columbian Exposition at Jackson Park.

Now after having outlined this partial catalogue of the more notable exhibits, both in sculpture and painting, contained in the Art Gallery, let us retrace our steps and call out from among this extensive list those yet the most notable, and observe what some critics have thought of their qualities. One of the sections which must interest us most is that which contains the exhibits of American sculpture. In speaking of the United States exhibit of sculpture at the Fair, it must be remembered that two of the greatest sculptors of this country, Mr. St. Gaudens and Mr. MacMonnies, are not represented at all. That is, they have no individual work in the Art Building, although the Fountain of the latter and the figure of Diana by the former are notable features. Some of the others who have done exceedingly fine work in sculptural decorations of the buildings and grounds are not represented at all, or only very slightly represented, in the United States exhibit in the Art Building. There are, however, some figures here which are well worthy of careful study.

The work of Mr. Paul Bartlett deserves and attracts a great deal of attention. A figure called "The Ghost Dance" is one of the most remarkable studies from the nude in the entire collection. It represents an Indian in the wildest imaginable motion, carried away

by fear and superstition, and more than half crazed by excitement. He is balanced on one foot, and bends forward with one leg lifted behind him, and both arms straight out in front with the hands hanging limp. His mouth is wide open, and the whole expression is one of brutal ignorance and fear. A subject like this is by no means agreeable, and violates many of the principles of true art, not only because it is disagreeable and lacking in beauty, but also because the violence of the action is not in the truest harmony with the best principles of sculptural work; nevertheless, there is wonderful mastery in the figure. Its poise is perfect, and the action of each muscle is rendered with a fidelity almost incomprehensible when one realizes how difficult it must have been to get a model to pose in any such position for any considerable length of time; but beautiful or not, the work is so remarkable that few who have seen it once will ever forget it.

THE GHOST DANCE. *Paul Bartlett, (U. S.)*

Mr. Bartlett's other group, here called "The Bohemian and the Bears," is also exceedingly interesting in quite a different vein. It represents a young Bohemian trying to teach a bear cub to dance, while another little cub is rolling around on the ground at his feet. It is exceedingly well done. There is a very charming expression of amusement about the Bohemian's face as he watches the awkward antics of the little bear, and notes

his look of perplexity as he vainly tries to find out just what this dancing-master wants him to learn. It is a very clever and amusing group.

John Donoghue has been favorably known for some time on account of his beautiful bas-relief and busts. He has three works here, the most important of which is called "The Young Sophocles Leading the Chorus of Victory After the Battle of Salamis." This is a nude figure of a young man playing a lyre. The carriage is very free and erect, his head is thrown well back, and the expression is earnest and thoughtful. The movement of the figure is exceedingly light and graceful, and the modeling of the limbs very delicate and beautiful. The statue well embodies what must have been the thought of the Greeks after their great victory. Yet it is not strictly classic in treatment, but expresses its meaning quite in the modern way, although dealing with the antique in subject.

BOHEMIAN AND BEARS. *Paul Bartlett, (U. S.)*

In the same room is Triebel's statue, "The First Fish." It represents a boy about nine or ten years old who is just taking from his hook a fish. The expression on the little fellow's face is very interesting. He is somewhat puzzled to know how to hold on to the slippery, squirming creature, and yet he is perfectly delighted that he has caught it. The anatomy of this figure is exceedingly well done, the long, lank limbs and undeveloped muscles of a

child of that age being suggested with great skill. It is not, however, a work of as serious importance as some of those which we have been considering.

It is the opinion of some able critics that Mr. Daniel French's group, "The Angel of Death and the Sculptor," has never been surpassed in this country. It is certainly one of the most original, beautiful, striking and impressive works of sculpture in the entire collection. There is a classic dignity in the figure of the angel of death which must be seen to be understood or appreciated. There is an absolute repose about it, an influence of resistless power, without the slightest violence of action; only the slow, dignified movement hardly to be described in words. The power of the still figure of this angel is best understood by contrasting it with the alert, strong form of the young sculptor, apparently in the very prime of youth and health; yet at one icy touch from that resistless outstretched hand his chisel is instantly arrested. No further blow comes from the mallet; the work is to be forever unfinished, and the young man looks in astonishment, not in fear, on this quiet but commanding spirit that has thus with one touch stopped his life and his work in an instant. This subject has been used so many times by different sculptors all over the world that it has seemed difficult and even impossible to make of it something entirely original and unlike any other work that deals with the same theme; and yet Mr. French has succeeded in doing this. The more his work is studied the better it will be appreciated, and the more true the realization of the fact that none but a great man could thus combine the classic treatment with the French technique and intense thoughtfulness, and the American's poetry and religious thought about the majesty of death and its meaning to man both here and hereafter.

In the section devoted to Swedish sculpture are three pieces which are exceedingly interesting. The first is a nude figure called "The Snowdrop," which is perfectly charming, both in composition and execution. There is a suggestion in it of what is implied by falling snow just softly sinking to the ground. There is a yielding languor about the whole figure that is beautifully rendered. The eyes are half closed, and the arms are raised toward the head as

if to support it as it sinks to rest. The whole figure is charmingly pure, suggesting not only the beautiful motion of the falling snowflake, but also its oblivion, its total loss of identity when it joins the others in the white drift toward which it is falling. This is by Hesselberg.

"The Two Brothers," by Borjesson, is also a study from the nude. One of the boys is considerably older than the other, and stands erect with a manly air of protection about him, while the younger one leans against him in perfect confidence and trust. The older has a bat and ball, while the younger has a bow and arrow, and they are ready for their sport. The subject is a simple one, but it is treated with such dignity and seriousness that it becomes really classic and full of meaning and spirit.

The third piece is Erickson's statue of Carl Von Linne. The figure of the great botanist is in bas-relief. He has just plucked a flower on which he looks with great curiosity. Other flowers are about him, and in a niche above is a familiar figure that may be the spirit of the flower come to crown him with a wreath. The expression of the famous old man is charming and benignant, as well as intellectual. The attitude is graceful, and the whole thing is a work of art of a very high order of merit and considerable originality of treatment.

The collection of French sculpture is such an extensive one that there must be some selections made out of it if there is to be any criticism. There are several works by Fremiet, a sculptor who has taken a very prominent place in modern French art. He does not always choose very agreeable subjects, and in this, perhaps, he transgresses that law laid down by Lessing, that art should always seek the beautiful. According to that German writer, if an art work is not beautiful it has no reason to exist. The statement is perhaps too unqualified. There are many works of art which have not for their first and principal aim beauty alone, but it is nevertheless true that without beauty of some kind no really good work of art is possible. Fremiet's equestrian statue of Velasquez is a masterpiece.

Another notable piece in the collection is Chapu's "Joan of Arc."

All French sculptors and all French painters choose this subject. Chapu has chosen to represent her as somewhat older than is usually the case in French art. She seems quite a woman in this statue, as she sits looking out toward her vision. The figure is not in armor, but Chapu has simply taken, not the maid carried away in a moment of enthusiasm, but the thinking, serious woman. She has been praying long, and her hands are clasped to show by their muscular tension the far more intense thought that is back of all—what is the strain of the muscles, what the pain that comes to the body when the salvation of France is to be thought of, and she is the one whom God has chosen to deliver her country from the foe.

Boucher, too, is admirably represented here in several pieces of peasant life.

One of the more notable sculptors here represented is Mercie. The group, "Even So," is one of the more notable which he shows. The group is intended to represent the fall of Alsace and Lorraine when the Germans took them. It is a group of very rare power. The spirit of the conquered nation is personified by an exceedingly beautiful peasant woman of heroic size, and possessed of even more strength than beauty. She supports with one arm the dying soldier whose life has been lost in her defence, and with the other she catches from his dying hand his gun, as if defiantly threatening the enemy with it, and inviting another appeal to arms. The figure of the soldier is as masterly as is that of the woman. He is almost dead, just falling, but he clasps her skirts in a vain effort to resist the fall. It is all over with him, but not with the French genius of Alsace and Lorraine, according to the sculptor's idea. In harmony and grace of position, in fine modeling, and above all in intellectual quality, this group is a very superior work.

There are two large groups in the French exhibit which have the same title, "The Blind Man and the Paralytic." One of them is by Michel, and the other by Turcan. The idea in both is the same. The blind man being able to walk carries the paralytic on his shoulder, while the other, being able to see, directs the steps of the blind. The subject is a very interesting one, especially so to the sculptor, because of the contrast offered by the two figures both in

modeling and expression. Indeed there is a contrast of expression between the head and the body in each one of the two figures. Thus, in the blind man is healthy action of the muscles, full of power and movement, but in his face is a helpless and most pathetic expression which tell plainly that all his strength would avail him nothing if the weak sick one whom he carries could not supply the place of the eyes he has lost. In the other figure are shrunken limbs, no muscular development, but in the face great alertness and intelligence as he directs the almost helpless though physically strong man who carries him. Both artists have treated the subject in very nearly the same way, but on the whole the work of Michel is to be preferred, because the action of the directing arm and hand of the paralytic in the other group seems a little too powerful for a person in that condition.

Several of the more important groups of French sculpture are contained in the rotunda of the French picture gallery. Among them are the four celebrated figures by Dubois which are upon the tomb of Lamorriciere. One of these is "Charity," a wonderfully dignified and beautiful figure of a woman caring for two little children. It is full of tenderness and beauty.

Saint Marteaux's "Spirit Guarding the Secret of the Tomb" is another powerful and excellent figure in the same rotunda. The spirit is protecting an urn containing the ashes of the dead. One hand is over the top of the urn, and the other arm is about it. There is little sombreness about this representation of the spirit of death; rather is it bold, unapproachable, and with a certain mystery about the eyes and brow. The rest of the figure is intensely human, however, and is very interesting, as suggesting what is a Frenchman's idea to-day of an angel or spirit to whom is entrusted the care of the secrets of death. To the Anglo-Saxon the conception would not be adequate to the great gravity of such a subject, but no one could deny the beauty of the figure and its expressiveness as far as it goes.

In the same room is a group by Puech, called "The Siren," which is a very fantastic or rather fanciful creation illustrating a siren carrying off a very young boy, who, while fascinated by her charms, is

half frightened by being in her power, and evidently does not know where she is taking him. The creature is represented with the body of a woman and something like the tail of a mermaid, and also with wings. The union of all of these so different forms in one body has been very skilfully done.

Idrac's figure in the same room called "Salammbo" is not so good. This is not to mean that it is not beautifully modelled; but there is something excessively disagreeable in the thought of a young and beautiful woman playing with a snake and allowing it to coil itself about her lovely form. For this reason the subject becomes so repulsive that not even the sculptor's art can make one wish to linger with it.

While no one denies the magnificence of the display in the Art Gallery in respect to paintings, and no one denies that days of study may be profitably spent in visiting the masterpieces contained therein, yet the compliments are unqualified by criticism. In relation to the German, Austrian, Polish, Russian, Spanish and French pictures it is thought that there is not a fair representation of the best men now painting in these various nations. It would not be fair to speak unfavorably of the art of any people when the best of it is not to be seen, and for that reason it is not well to devote extended criticism to the pictures sent here by these nations. As they are seen here, they are decidedly inferior on the whole to those sent by the other peoples represented. There are a great many pictures in the German gallery, but few that command attention and reward it. There are a number of large canvases, most of them subjects of historic or anecdotal interest, but very few that have real technical merit. There are many subjects which are somewhat spectacular, and not only the German, but also the Austrians, the Poles and the Russians are prone to this fault. It is unnecessary to specify those included in this criticism, for they are so numerous that no one can fail to notice them. In the Spanish collection, which is a very small one, some of the same fault is to be seen. The best painters are not represented, or, if they are, they are not seen at their best. There is one, however, by Sorolla, of Madrid, called

"Another Marguerite," which is admirable in its way. The subject of the picture is very touching, and the execution is the best.

In the Austrian exhibit the most notable of these large spectacular pictures is Brozik's "Fenstersturz," which represents the Protestants throwing the emperor's counsellors out of the window because they refused to comply with the demand for tolerance toward the growing Protestant sect. It is a ghastly subject, the agony of the doomed men being rendered with fearful realism; but there is good work in it, especially in drawing and spirited rendition of action.

In the loan collections are many magnificent pictures, which have been named earlier in this chapter. Manet's picture of the "Dead Toreador" has much to suggest, not only about life in Spain to-day but it also takes the thought back to the old Roman times. There were gladiators then and there were many martyrs. Those who came into the arena, whether forced to come there or coming from their own choice, were facing deadly peril. It is true to-day that the Spanish bull-fighter has to take his life in his hands. It is not possible to deny the picturesqueness of a Spanish bull-fight. The Toreadors all wear the costumes of the old time in Spain, and these are very splendid and elaborate. The picture might have been painted by Velasquez. There is the same simplicity of treatment, the same absence of accessories that so often mark the work of the great Spanish master. One other notable picture in the loan collection which must be mentioned at greater length is Fortuny's "Beach at Portici, Italy." In the treatment of the sky this is one of the most wonderfully beautiful pictures in the entire collection. The blue is perfectly exquisite and luminous with the beauty of light and atmosphere. The clouds that float in it are as delicate and light as swans' down. There are many of these small, fleecy clouds, and their brilliant light is well balanced against the deeper tone of the blue. The sea below them is bluer yet, and lends still another charming note to this harmony of color, while the foreground, with the beach of glistening sand, the brightly dressed figures indistinctly outlined and beautifully mingled with flowers and

trees about and behind them, is perhaps as charming as any other part of the picture.

The artists of Holland show not a large collection, but the very best artists of the country are represented, and the pictures are exceedingly fine in quality and in average excellence. It would seem as if it would have been wiser for France and Germany and Austria to have done the same thing, but they have not done it. In the British collection and that of Sweden and the United States also the best artists are represented. It is evident at once, in looking for the first time at these pictures of Holland, that there is something very unusual about them. The tone of the rooms seems different from the others. There is nothing violent, theatrical or exaggerated, though there is much of beauty and quaintness. On more careful examination it is seen that almost all these pictures are very good, and some are masterpieces. The place of honor is given to Israels, and very justly so, for great as some of the others are, he is the greatest of them all. This masterpiece of Israels' is called "Alone in the World." In a small room, dimly lighted, is seen a man sitting by a bedside whereon is the dead body of his wife. He is not looking at her body. He looks straight away from it, out into the world, with an expression of hopelessness, as utterly mute and uncomplaining as that of an animal wounded to death. There seems no alleviation of his suffering, certainly nothing that money could bring, for there is no money, and there are no comforts. The plain pitcher and glass on the table by the bed tell how little the poor woman had to alleviate her last suffering. There seems no comfort from religion either. There is no priest, no cross, no ministering servant of the Lord. The man is old, and perhaps he might look toward heaven whither his wife has gone, but he does not. He looks at nothing and thinks of no one. It is the helplessness of human life alone in the presence of death. A more pathetic picture could hardly be imagined. One wonders whether the stricken man will ever rise from the stool on which he sits, and where he will go if he does rise, for one place is like any other in the world to him now. Of the technique of this picture it is useless to speak, for it is well known that Israels is one of the

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master painters. His tone is usually, but not always, dark and subdued, with deep, mysterious browns in the background, and his effects of light and shade are very fine. Certainly it is a manner quite of the Dutch school and not resembling that of any other painter.

The same wall on which this great Israels hangs is indeed a study, and probably the best in the whole Art Gallery. On either side of it is a magnificent marine, by Mesdag, while above is a large picture by Hubert Vos. Between the Israels and the two Mesdags are two exceedingly fine studies by Bosboom, called "Dutch Reformed Church, Holland," and "A Synagogue in Amsterdam."

HAMILTON.
By Wm. O. Partridge.

Of the works of Mesdag it is hard to say enough in praise. No marine painter of the time compares with him unless it be Alexander Harrison. The marked peculiarity of his work is that he paints water in violent motion without the loss of transparency and color, and without the dauby effect which is so often seen in the painting of the crests of foaming waves. The sky is no less wonderful than the water in these pictures. Indeed, it is the sky that first claims attention, because the artist has chosen a low horizon line deliberately to give room for the showing of those magnificent masses of clouds with which the Dutch painters through their daily living become familiar and learn to love so dearly. There are several of these marines by Mesdag, of which the artist himself prefers the picture called "In Danger." It represents a terribly stormy sea, almost black,

under clouds almost as black, the wind blowing dead on shore, and a little vessel trying to avoid shipwreck. It is not, at first sight, nearly so attractive a picture as the others, but careful study will reveal great skill in portraying forms of waves even in the most violent action, and the tone, though not so agreeable to the eye as in the other pictures, is nevertheless quite suitable for the subject the artist has chosen. In the picture called "Ready to Sail Out," action is given more beautifully than in the others. The boats have been pushed to the edge of the water. They touch the waves, and soon will be in the midst of the surf. Their picturesque sails are set, and in a few moments the fishermen will be bounding over the waves in search of the fishing ground. It is full of life, and in the treatment of the sails quite suggestive of Venetian fishing boats.

The pictures of Vos which are found here are all creditable, and their work contains many admirable qualities, but they cannot rank with the painting of Israels or Mesdag. The painters of Holland do not consider that Mr. Vos is really a Dutch painter. He lives in London, and the most casual inspection of his pictures serves to show that they are not in the manner of any of the other Dutch painters' art. His "Angelus" is an exceedingly quaint and interesting picture, and has at least this flavor of Holland, that there is a great deal of blue in the general tone of the picture, and the accessories too are quite Dutch in character.

Another great Dutch artist is Jacob Maris. He has five pictures in the Holland collection and one in the loan collection which are exceedingly fine. "The Two Mills" is perhaps his most important picture in the Holland collection and is certainly one of the most beautiful that hangs there. It is a picture of two Dutch windmills, of course, with a canal near them. The chief charm of this picture is the sky, which is superbly rendered.

The last picture to be described here is perhaps the most fascinating of all in the Holland exhibit. It is "Orphan Girls at Amsterdam," by Miss Therese Schwartze. The orphan asylum which this picture represents is under the care of the municipal authorities. The girls are taken care of there, are dressed alike in red and black, which are the colors of the city of Amsterdam. They

wear white caps and kerchiefs, and the whole effect is exceedingly charming. A group of these girls are gathered around a piano at which one of them sits playing, and they are singing, some with eyes uplifted, some with heads bowed, all with the most reverent and even rapt expressions of countenance. Some of the faces are exceptionally beautiful. The grouping is so fine that it seems to make a complete unit of the picture, and really suggests that these young girls are bound together by some common love. It is impossible to escape the exquisite charm of this simple scene, and it is so touching, and so poetic, that after looking at it for a while few can restrain a tear. The sadness of the bereaved lives, the love of Him who cared for the little ones, the trust of these young girls whose faces tell no fear, all this, when joined with lovely coloring and graceful forms, unite in a picture which is certainly great in this collection and would be rare anywhere.

Enough of the more notable pictures contained in the Art Gallery have now been reviewed with such critical care that one may judge as to the quality of the exhibits; while it is to be remembered that scores of the others named in the completer list are as worthy of being thus analyzed and complimented.

Although the artistic features of the sculpture decorating the exterior of the grounds received some consideration in a previous chapter, yet it is well here to notice it again from the more strict standpoint of art, and to observe the impression made on art critics by the outdoor sculpture. Numerous critics, writing in the magazines and newspapers, devoted especial attention to this statuary, and with almost uniform congratulations to the artist. Among others, Walter Cranston Larned made an exhaustive review of the merits and demerits of the art exhibits at the Exposition, paying attention to the decorations as well as to those pieces brought to the Fair for display only. He tells us some interesting facts in regard to the animal sculptures by Mr. Kemeys, which guard the bridges surrounding the Court of Honor. They are remarkable indeed. Their fidelity to nature shows at once that the artist must have loved such subjects, and must also have had exceptional opportunities to

study them. The great artist, Barye, was forced to study his animal forms in menageries because he had not the means to go to the desert or jungle in search of his lions and tigers. He mastered their forms in the cages at the Zoölogical Gardens of Paris while they were living, and, when one chanced to die, word was sent directly to him, and the sculptor mastered their anatomy

MIDSUMMER NIGHT'S DREAM. *By Wm. O. Partridge.*

by dissection, and the most careful measurements and comparison one with another. The forest of Fontainebleau helped him with his backgrounds because his artistic mind could find either a desert or a jungle there. The great Frenchman had the advantage of study in that greatest school of art at Paris, though he did not

follow its traditions in animal sculpture or painting. Nevertheless, he gained a certain finish there that our American artist lacks, while the latter, on the other hand, has a certain perfect naturalness

PANTHER AND DEER. *By Edward Kemeys,(U. S.)*

which perhaps even Barye's great art could not compass. This much may be learned by observing the works themselves, but they do not tell where the artist learned to know the animals. Mr. Kemeys has an intense fondness for the western life, and has been a great hunter. He spent a long time among the Indians. He hunted with them and learned their life, and the life of the animals which they sought in their chase. He had many a thrilling adventure, and the animals he reproduces here were either slain by himself or by his Indian friends, so that he was able to study them where they lived.

Mr. Kemey's "Still Hunt" is perhaps the finest piece of animal

sculpture at the Fair. It is a wonderful animal, instinct with life. Every muscle is quivering with eagerness for the coming spring upon the prey, yet the crouching attitude and the stern repression of action show how the creature is holding back in absolute stillness until the deer, all unsuspecting, comes within sure reach of the fatal leap. Another moment and this tragedy of animal life will be over. The beautiful deer will be no more—the savage panther will be feasting on his blood. So much of a story is not often told in sculpture, but is plainly written here. The method of treatment greatly resembles Barye's, in that the aim is to use masses rather than details in producing effects and expression. In order to do this successfully an artist must know his subject well, because it is not possible to decide what to leave out unless it is also thoroughly known what might have been put in. Let any one stand before the "Still Hunt" and study it long enough to master its meaning, and he will find that he knows more about the wild animal life of the far west than he ever did before.

The same effect will come from a study of the grizzly bears by the same artist. They are simply wonderful in expression, and it is not possible to doubt for a moment their absolute truth to life. The bear is not so graceful or artistic a subject as the panther, but he is equally interesting in his way. His awkward, uncouth strength would be more than a match for the agility and high-strung muscular power of the panther. The grizzly is a better subject than the Polar bear because of the latter's length of neck.

Mr. A. P. Proctor has also done some animal sculpture to ornament the grounds, which is worthy of notice both for its beauty and for its fidelity to nature.

Mr. Larned tells us that Mr. Proctor left the work of modeling the horses for the two equestrian statues which stand before the great doorway of the Transportation Building to his assistant. He did not have time to do all himself, and so chose to delegate this portion. This explains to us then why the figures are so much better than the horses. Both of these, the Indian and the cowboy, are spirited and successful. For the former, Red Cloud, one of Buffalo Bill's Indians, was the sculptor's model. He became very much

interested in the work, and posed on his pony in all sorts of positions. The attitude finally chosen is one of rest, but the expression is full of intense eagerness and repressed action.

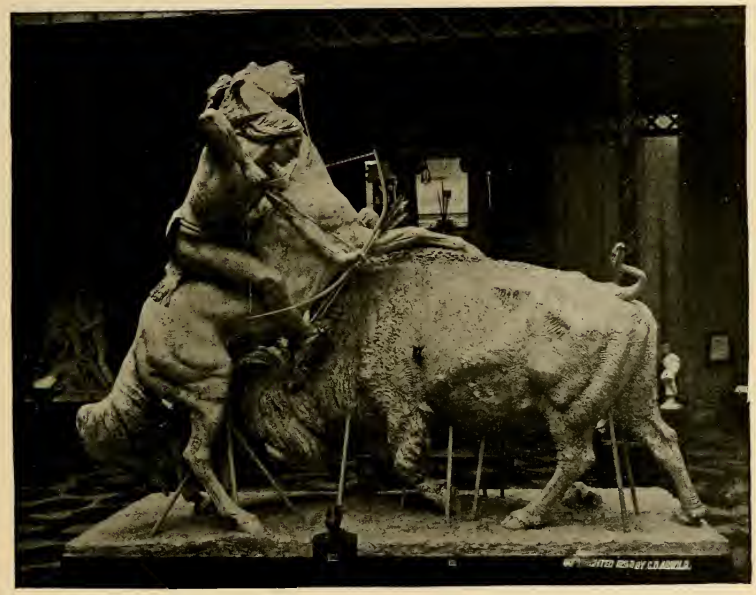
Mr. Martini's work on the Agricultural Building cannot be as well seen as the animals just considered, because it is placed so high, but enough can be seen to show that the work is of a very high order of excellence. The various groups are extremely striking and original. The horses and the oxen are conceived and executed in a grand style, and they are exceedingly effective, spirited in action, and altogether appropriate in their place. No other building on the grounds is so profusely ornamented with sculpture as that of Agriculture, and it might have been better if there had been less of it, however admirable the quality may be. The groups of the nations on top of the building are rarely beautiful. Seen as they are, far up against the sky, their lines are most graceful, exquisitely harmonious and full of the classic spirit which so well emphasizes the beauties of the lovely building they adorn.

The sculptor of the groups on the Administration Building is Carl Bitter, of New York. There are many of these groups, and they are exceedingly elaborate in composition; so much so that they are too complicated in their general effect. Nevertheless, as a whole, they produce a rich effect, especially at a distance, when they serve to accent the splendor of the golden dome above them.

Mr. Baur's figures of "Eloquence," "Music," "Fisherboy," "Navigation," and "Indian Chief," which ornament the Casino, Peristyle and Music Hall, are all thoroughly successful, hard as the task must have been to produce anything worthy to decorate so noble a colonnade as this one of Mr. Atwood's. The work of M. Waagen, on Machinery Hall, receives hardly so much praise, the winged figures on the pinnacles especially appearing rather too large for the position in which they are placed.

The sculptural work on Horticultural Hall was done by Mr. Lorado Taft, and some of it is exceedingly fine. It is noticeable how closely in harmony with the architecture this sculpture is, both the frieze and the two fine groups of the birth and death of the flowers. The architect and the sculptor must have worked together

here. Some of the children in the frieze are very lovely. By repetition of the design this frieze is carried all around the building and the effect is very rich and beautiful. Mr. Taft has probably done nothing better than these groups, one guarding either side of the main entrance. There is a great deal of sentiment in them, and some of the figures are exceedingly beautiful. A more appropriate subject for such a place it would be hard to select, and not



BUFFALO AND INDIAN. *By H. Bush-Brown.*

only is the meaning suitable, but the treatment exactly suits the architecture.

Of the figures, the principal statue is Mr. Prince's colossal "Republic." There are differences of opinion about this work. Mrs. Van Rensselaer, who is certainly one of the best American critics, praises it very highly, and she especially commends its adaptation to the architecture that surrounds it. This would seem

to be just and well-merited praise, but the query rises, whether or not the gilding of the statue helps in this particular quality. The buildings are white, meant to be like marble, and what color decoration there is on them is for the most part back of the colonnades and in the dome, thus not giving much effect of color at a distance. The gilded "Republic," therefore, stands out in very sharp contrast with its surroundings. It is true that the Athenians put statues of ivory and gold among their marble temples on the Acropolis, but these temples, though built of white marble, were much more elaborately decorated in color on the exterior than are those at the World's Fair. Indeed it is thought that the Greeks painted many of their statues, both single, figures or groups, and those used in connection with architecture. Probably then there was more harmony between those statues and the buildings about them than there is between the "Republic" and the buildings which surround it. Whatever be the reason, the brilliant gold of this immense solitary figure in the midst of the white columns and palaces seems hardly in place. It looks better at night when, by reason of the yellow light on the building, everything is brought more nearly into the same key. Apart from the gilding, the figure itself cannot be properly appreciated, except in connection with the architectural effects which surround it. The sculptor himself says that he has

SHAKESPEARE. *By Wm. O. Partridge.*

treated the statue in a formal and almost archaic manner on account of the almost perfectly symmetrical arrangements of the architecture around it. It is his triumph that he has succeeded in doing this. In line and form, and in dignity too, this figure harmonizes well with the stately buildings about the Court of Honor. Taken by itself, the figure would not be so agreeable because it would seem a little stiff and lacking in that grace which is to be expected in the sculptured female form. On the whole, it must be said, that

A LEGEND OF THE DESERT. *F. Mellville Du Mond, U. S.*

there is a grand and severe dignity about the great "Republic" that is exceedingly impressive and well emphasizes the grandeur of those halls into which she courteously invites the nations of the world to enter.

The other sculptural ornaments about the basin of the Court of Honor are numerous, and most of them are exceedingly fine. Perhaps the most striking detached sculptures are the horses and bulls, by Mr. Potter, with the figures beside them, by Mr. French. These animals are really noble and grand in style, and it would be

hard to imagine more absolutely appropriate decorative groups for the principal entrances before which they are placed. The cart-horse is treated with remarkable dignity. The worth of his labor is recognized in the statue, and he seems himself to be aware that without him the tilling of the fields would be impossible, except as savages might attempt it. The proud curve of his neck and his intelligent eye show that he is proud of helping the master who stands beside him while they both rest after the work of the day. The bulls are equally fine and majestic, and well indeed do they symbolize the power of agriculture. The figures beside them are as fine as the animals, and the treatment of both is in the closest harmony, both in general breadth of method and particular combination of forms and lines. In symbolic expression, also, the figures and animals perfectly agree. It is rare indeed to see groups by two sculptors so perfectly harmonious in their central motive and in the treatment of it.

It is this continuous harmony of desire and method that resulted in making the whole area of the World's Columbian Exposition as truly an exhibit of the Department of Fine Arts as the exhibits contained in the Art Galleries themselves. Artists admire the architecture and the general decorative effects of the Fair as truly as they do the paintings upon canvas, and it is this fact that makes the whole view of the Exposition the grandest that the modern world offers to man.

MORE vicissitudes have attended the Department of Liberal Arts, of which Prof. Selim H. Peabody is chief, than any other of all on the grounds of the Exposition. This is solely due to the immensity of scope covered by the department, the magnitude of its exhibits, and the fact that proper appreciation of its magnitude did not exist until dire necessity drove it home to the offices of the construction officials. The greatest building of the Exposition was dubbed the Building of Manufactures and Liberal Arts. It was an immense structure as originally planned, with two great courts in the centre. When pressure for space first began to be felt, it was decided to roof these great courts, as related in the chapter on Manufactures, thus securing several acres more of floor area. But, as space was assigned, it was seen that unless another great building should be provided, the Department of Liberal Arts was going to be sadly cramped. The director-general stood firmly by the chief of the department in his demand that another building be erected. It was argued, however, that there was no suitable site for it, and no time for construction. Finally the pressure of the educational interests became so strong that it could no longer be resisted, and it was decided to erect the new building for the Liberal Arts exhibits. After it was begun, however, time was short, and it was seen that it would not be finished in time to install exhibits satisfactorily for this depart-

ment. Then the new structure was assigned to the Anthropological Department, added space was thus secured in the Manufactures Building, and it has therefore gone back to its former purposes, to that extent. A great portion of the exhibits of the Liberal Arts Department are, however, displayed in the Anthropological Building. The space thus provided in the two buildings is ample for all the demands that may be made upon it.

The groups included in the Liberal Arts Department at the Centennial Exposition in Philadelphia occupied about 35,000 square feet, at Paris in 1878 about 111,000 square feet, and in 1889 in the same city about 244,000 square feet. Here the same exhibits occupy more than twice as much space as at the last Paris Exposition. The Manufactures and the Anthropological Buildings are each described in other chapters, so in this we may devote ourselves entirely to the exhibits and the scope and classification of the great department.

It is interesting to note in this instance the exhaustive scope of the classification of the great department, and the list of groups into which it is divided is worth inserting here. They are as follows:

Instruments and apparatus of medicine, surgery and prosthesis; primary, secondary and superior education from elementary instruction to government aid in education, and covering this wide range in detail; literature, books, libraries and journalism, which include book printing, illustrated papers, daily papers, trade catalogues, library apparatus, directories of cities and towns, and all forms of maps; instruments of precision, experiment, research and photography, including photographs, civil engineering, public works, constructive architecture, including bridge engineering of every character, sub-aqueous construction, irrigation, railway engineering, mining engineering, and constructive architecture in general; government and law, illustrating the various systems of government, international law and relations, *fac-similes* of treaties, protection of property in inventions, patent and postal systems, commerce, trade and banking, including historical and statistical matter, with reference to general commerce, counting-houses, ware-house and storage systems, grain elevators, boards of trade, exchanges, insurance com-

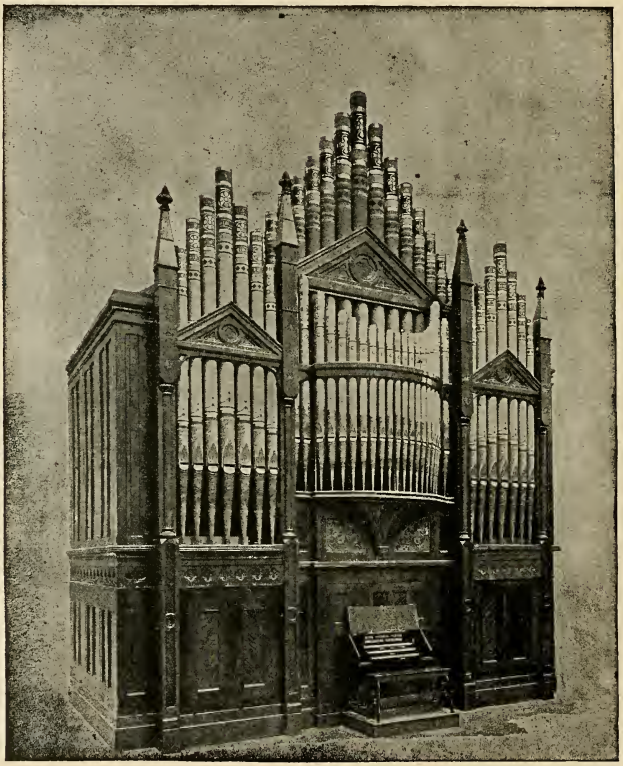
panies and banking houses; institutions and organizations for the increase and diffusion of knowledge, including institutions founded for such purposes as the Smithsonian, the Royal Institution, the Institute of France, British Association for the Advancement of Science, American Association, etc., and covering academies of science and letters, museums, collections and art galleries, national exhibitions, publication societies and libraries; social, industrial and co-operative associations, covering clubs of all characters, political, workingmen's, industrial, co-operative, secret and miscellaneous societies and organizations; religious organizations and systems, covering their origin, nature, growth and extent, religious music, choirs, hymnology, missionary work, the spreading of religious knowledge, systems of religious instruction, charities and charitable associations; music and musical instruments, covering the history and theory of music, music of primitive peoples, history, portraits of great musicians, self-vibrating instruments.

In addition to this exhaustive classification, the groups of archæology and ethnology, charities and corrections, and hygiene are to be remembered as being provided with space in the Anthropological Building. The ground covered by the department is certainly immense.

Almost all of the displays in the Department of Liberal Arts in the main building are contained in the galleries of the structure, although a certain portion of the southeast corner on the main floor is also devoted to that purpose. Almost all of the States of the Union and the foreign countries have displays here. Kindergartens, schools for the blind, and deaf and dumb are noticeable. All the leading colleges of the United States, and many of foreign nations, have strong exhibits of their educational methods and systems. Several of the large publishing houses of the country are represented. Musical instruments are given a prominent showing, as well as instruments of science.

One interesting exhibit is that of the Pasteur-Chamberland Filter Company, of Dayton, Ohio. All sorts of filters are shown in operation, illustrating the perfection of each, and their application to common use. The greatest organ in the building is that manu-

factured by Henry Pilcher's Sons, of Chicago and Louisville. It is thirty-three feet in height, twenty-five feet wide, and fifteen feet deep. In a building of ordinary size it would present an imposing appearance, and even in this great building it is one of the most



GRAND ORGAN. *Exhibited by Henry Pilcher's Sons.*

attractive exhibits. The case is of quarter-sawed red oak, handsomely finished, and the displayed pipes are arranged in graceful groups and are richly decorated. The wood-work of the key-boards and accessories is of handsomely polished ebony, while the

keys, plates, indicators, pistons, etc., are of genuine ivory. The instrument is valued at $12,000. It has hundreds of pipes, including all sorts of combinations known to modern organ building.

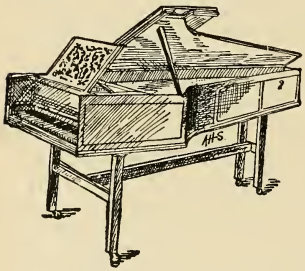
In the display of band instruments, C. G. Conn, of Elkhart, Ind.,

PAVILION OF LYON & HEALY.

makes a handsome exhibit. It is contained in a beautifully carved and highly polished oak case, eighteen feet long, eight feet wide and fourteen feet deep, fitted with French plate glass. The case contains Boehm system flutes, metal clarionets, "Wonder" cornets,

and other valve band instruments, double-bell and helicon instruments and drums. Some of these are very handsomely finished, the gold-plated cornets and saxophones being especially prepared by skillful engravers. Some of these are valued at $500 each.

Lyon & Healy, of Chicago, have a magnificent pavilion, filled with everything that is fine in all varieties of musical instruments of their own manufacture. These include pianos, organs, harps, guitars, band instruments, and all novelty instruments of smaller character. Many of the other great piano manufacturers of the United States also exhibit here, and the display is a beautiful one.



HARPSICHORD, MADE BY KIRKMAN, LONDON, 1776. OWNED BY GEORGE WASHINGTON.

Morris Steinert's collection of ancient musical instruments, upon all of which he plays, is very curious. He has a harpsichord, made in 1679.

The literary exhibits in the north gallery of the building are of great interest. Charles Scribner's Sons, of New York, occupy a space 35x16 feet. The booth is of wood the color of the magazine, and gilded, with open decorated façade, eleven feet in height, its interior fitted with showcases, bookcases and screens for the display of original drawings. A full set of all their book publications is exhibited, classified under the various departments of literature. Considerable space is given to art work, with some specimen original drawings and water-colors. A special exhibit is also made of recent decorative covers, together with the original artist's designs, the brass stamps used for transferring the designs to the cloth, all illustrative of the latest artistic work in book binding. Another branch of the exhibit of particular importance is the exhibition number of Scribner's Magazine, which the publishers planned to make as fine an example of an American magazine as could be produced. Besides the original drawings, water-colors and paintings used in this number, which are framed and hung upon one of the walls of the pavilion, there are three cases, covered by glass

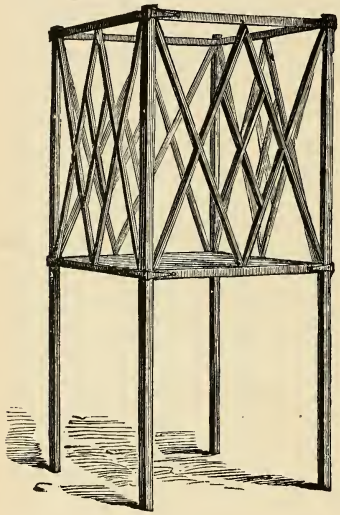
containing the original manuscripts by W. D. Howells, Bret Harte, Thomas Hardy, Henry James, Geo. W. Cable, Thomas Bailey Aldrich, Sarah Orne Jewett, and others whose writings appear in this number. To show the process of illustrating a modern maga-

EXHIBIT OF AMERICAN PHOTOGRAPHS.

zine, there are the original drawings, the same reproduced by photo engravings, by wood engravings, also the prepared wood block, the block upon which the picture has been photographed for the engraver, and the block after being engraved, but before being electrotyped. In the same way the progress of the preparation of literary contents is shown, by the manuscript, the galley-proof, the author's revise, the make-up, with the arrangement of illustration, the page-proof, the foundry-proof, and finally the printed sheet. By the side of these examples of modern magazine making is a copy

of The American Magazine for 1797, which was the first magazine ever published in America.

The Century Company occupies a pavilion in the same neighborhood, of about the same size. The large space between the doors on the outside of the pavilion contains a group of eight of the remarkable drawings made by the artist, Castaigne, for the World's Fair article published in the May Century. Between the two doors, as one enters the pavilion, is the exhibit of the Century Dictionary. On the walls above are the original drawings of some of the most interesting illustrations in the dictionary. In the case below is an exhibit showing how a dictionary is made, with copies of some of the earliest English dictionaries up to the "Century," printer's copy of a part of the latter, with proofs in various stages showing changes, corrections, etc. This magazine also shows all the processes of illustration. There are displayed a great number of interesting manuscripts and drawings for important illustrations in the Century and St. Nicholas. Manuscript poems by Tennyson, Longfellow, Whittier and Bryant are shown, together with the first chapter of the manuscript of "Little Lord Fauntleroy," by Mrs. Burnett, and original stories by other well-known writers. The originals of famous letters and documents quoted in Messrs. Nicolay and Hay's "Life of Lincoln" are shown, including a certificate of a road survey made by Mr. Lincoln in 1834, with a bill for his services at three dollars a day. There is also the letter of the committee apprising Mr. Lincoln of his first nomination for the presidency and his reply, the corrected copy of the inaugural



PULPIT USED BY WHITEFIELD WHEN IN AMERICA.
Exhibit of American Tract Society.

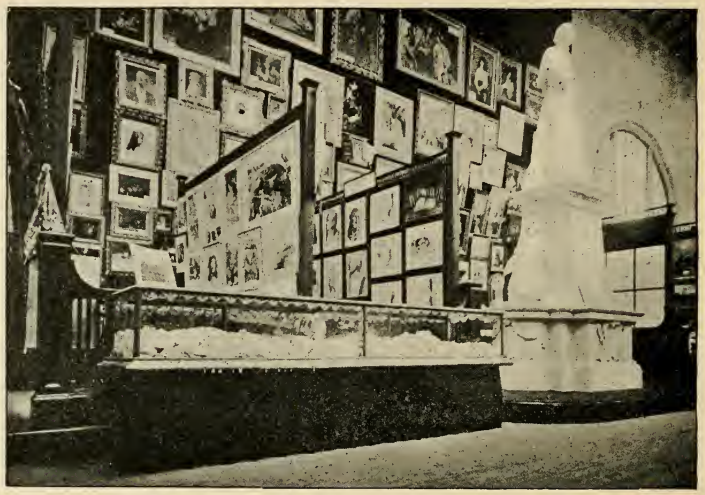
address from which he read, March 4, 1861, the original draft of his proclamation calling for 75,000 men, drafts of important messages to Congress, Mr. Lincoln's written speech on presenting Grant his commission as Lieutenant-General, and the autograph copy in pencil of General Grant's reply. Letters from General Grant to the editors of the Century regarding his papers for the war series, the last from Mt. McGregor, are exhibited, with original manuscripts by General McClellan, Joseph E. Johnston, and others.

Ginn & Co., of New York and Boston, display a full line of their educational publications and text books. Mr. Plimpton, of the same firm, makes an interesting exhibit of old school books illustrating the growth of education. For instance, he begins the subject of arithmetic with two manuscripts which were written before the days of printing; then there is the first arithmetic ever printed, which was made in 1478. Then follow others of 1491, 1503, the earliest arithmetic printed in English, and so on down to the present time. After the same manner are exhibited series of geographies, of grammars, of reading books, primers, etc.

LONDON SCHOOL BOARD.

In the religious section the American Tract Society makes an interesting historical exhibit of the progress of its work and the extent to which it has spread. The Society shows the chair used by the "Dairyman's Daughter," about whom one of the widest circulated tracts ever published was written. There is also shown the curious movable pulpit used by the famous Whitefield in his preaching tours as an evangelist.

Numbers of school supply houses make interesting displays. The Prang Educational Co., of Boston, shows charts, drawings, examples of clay modeling, wood-working, paper-folding, etc., illustrating the Prang course in form study and drawing for public



CATHOLIC EDUCATIONAL EXHIBIT.

schools. There are also charts illustrating exercises in the color-course for public schools. These are of great interest as showing modern methods of instruction. The Central School Supply House, of Chicago, shows all sorts of school apparatus and supplies of which they are manufacturers and publishers. The exhibit is a novel one and attracts much attention. The Funk & Wagnalls Co., of New York, Houghton & Mifflin Co., of Boston, B. Appleton & Co., of New York, Harper & Bros., of New York, and other noted publishers, make excellent displays. New York shows the immigration statistics for forty-five years.

The College Fraternity's exhibit is a reproduction ten feet square at the base and thirty feet high, of the most famous specimens of Greek architecture, the Choragic Monument of Lysicrates.

The Catholics of the United States have an exceptionally fine educational display, in the preparation of which much interest has been taken by the Pope and other Church dignitaries.

London publishers contribute engravings, fine art publications, and a collection of newspapers illustrating the growth of English journalism. The American Bible Society has a rare exhibit of ancient and modern Bibles, both cheap and costly editions, and Bibles printed in three hundred different languages. The big Yerkes telescope, though in an incomplete condition, is exhibited in the south galleries.

Harvard University has a large gallery space, and its cabinets are particularly interesting to scientists. Among other colleges which here exhibit are Amherst, Bryn Mawr, Chautauqua, the

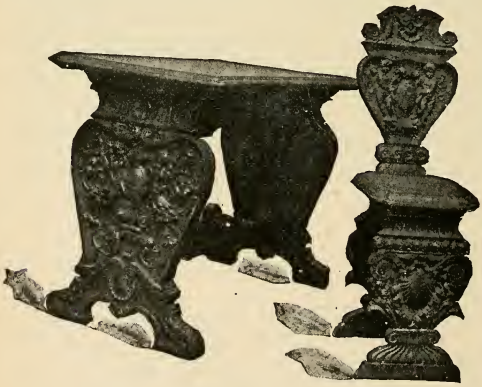
VIEW IN BRITISH SECTION.

University of Chicago, Johns Hopkins University, Columbia College, The Massachusetts Institute of Technology, Princeton, the University of Michigan, Vassar, Yale, and almost every one of the State Universities. A space in the north gallery is occupied by Rand, McNally & Co., with an interesting and valuable exhibit of educational maps.

The American Bronze Co., which has its art foundry at Grand

EXHIBIT OF PURDUE UNIVERSITY.

Crossing, near Chicago, is engaged in the industry of standard bronze casting. In their pavilion they make a fine display, among the exhibits of which is shown the life mask from which was modeled the statue of Lincoln, at Rochester, N. Y. The company makes a specialty of casting mammoth figures, as well as small artistic bronzes, and in both they claim to equal



CHAIR AND TABLE IN MAHOGANY.
Designed and Executed by Pupils of Penna. Museum and School of Industrial Art.

LOVE'S AWAKENING. *Painting by Perrault in Mallin's Food Exhibit.*

the foundries of Europe. In the sections devoted to the display of medical, surgical, physical, chemical and other scientific apparatus, James W. Queen & Co., of Philadelphia, make an elaborate and interesting showing. The instruments which they manufacture are known throughout the world, and the exhibit here receives much attention. W. & L. E. Gurley, of Troy, N. Y., make an exhibit of field instruments for the use of engineers and surveyors. They show other scientific specialties for architects, draughtsmen and engineers in an artistically designed pavilion.

A. L. Bancroft & Co., of San Francisco, show models and charts illustrating Mr. Bancroft's plan for numbering country houses by the "Ten-Block System." This system has been established at Contra Costa, California, with considerable success, and it is rapidly

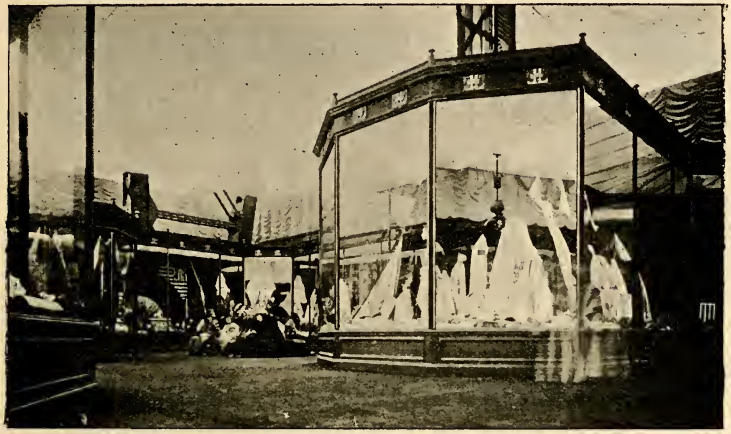
GERMAN SECTION.

spreading. The exhibit is interesting, and is certain to impress the merits of the idea upon all visitors.

Among the foreign countries represented in the galleries with

educational exhibits are Italy, Russia, Mexico, Brazil, Austria, Germany, Great Britain, New South Wales, Canada and France.

In the southern part of the Anthropological Building 30,000 square feet are taken up by two sections of the Liberal Arts



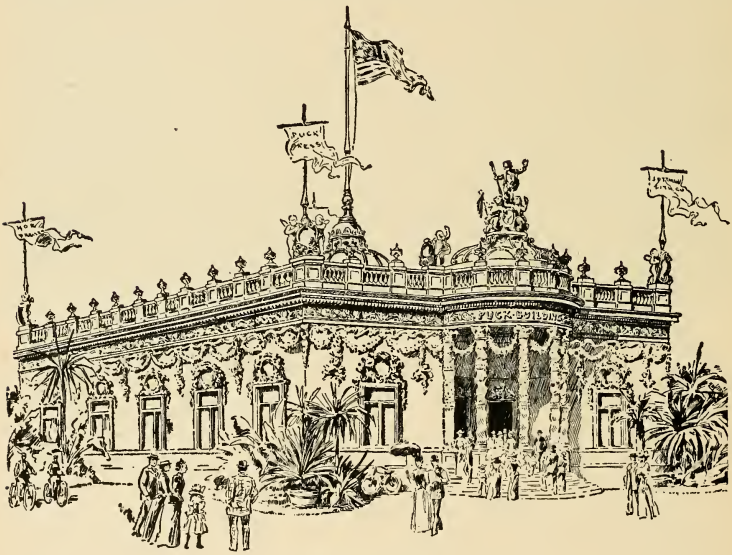
A CORNER OF FRENCH SECTION.

Department, the Bureau of Charities and Corrections, and the Bureau of Sanitation and Hygiene. Here the great philanthropic societies of the world, charitable organizations, prison reform societies, societies for the prevention of cruelty, cookery schools, etc., all have their exhibits. Societies for physical culture, as well as gymnastic apparatus, also have their home here. Anthropometric systems are displayed, and the sociologist who is seeking means of benefiting the human race may find here suggestions for work of many lifetimes.

This department of Liberal Arts comes very close to the welfare of every one, and is deserving of immense attention. To some extent it is subordinated and hidden by the enormous array of exhibits in the Manufactures Building, and visitors do not reach the pavilions which contain these exhibits in as great numbers as

should be. Those who seek them, in the two great buildings, are more than repaid.

Properly belonging in this department is the exhibit contained in the "Puck" Building, the beautiful little pavilion which is located just north of the Horticultural Building. This well-known comic paper has constructed a dainty edifice where all the friends of the publication are made welcome. It is elaborately decorated with sculpture and ornamental designs. An artistic group in bronze crowns the portico. It was designed by Henry Baerer, the



PUCK BUILDING.

celebrated sculptor, and represents Puck standing on an eminence from which he commands a view of the world. In one hand he holds a mirror, and in the other a crayon. Within the building the publishers of the magazine show all the processes of illustration and color lithography from beginning to end, and the presses are constantly employed in printing a World's Fair edition of the publication.

THERE is no science and no art which is not exemplified in its highest sense within the limits of the great Exposition. Therefore Music, that delight which is at once art and science, is here given prominence and distinction worthy its deserts. From the beginning of plans for the enterprise, the musical interests of the world have had consideration. The best minds in the musical world have been enlisted in the work of making here a musical epoch. The plans have been those of broad-minded and energetic men, and the results are magnificent. In the consideration of the subject in this work it must be divided for best understanding. The musical interests of the Exposition are under the control of the Department of Liberal Arts, and all exhibits in connection with music are made in the buildings of that department. Therefore in the chapter on Liberal Arts will be found the description of all such exhibits as pianos and other musical instruments, and literature and other material things pertaining to music. But in this chapter it is desired to make plain the scope of the musical interests as represented in the actual rendering and production of music, vocal and instrumental, within the Exposition itself. There is then ample material to engage attention.

First as to the great auditoriums which house the musical features of the Fair. There are two of these, both triumphs of architecture, measured by the purposes for which they are intended, thoroughly

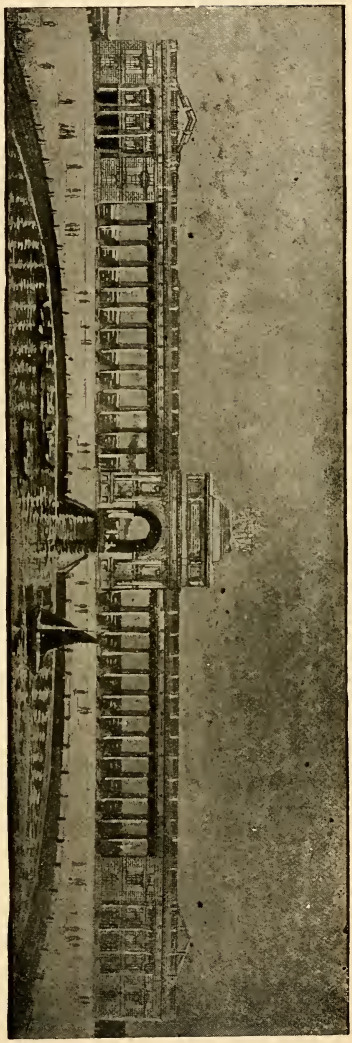
suited to the demands made upon them, and ornaments to the City of White, of which they form a part. One is Music Hall, and the other Festival, or, as it is sometimes called, Choral Hall.

Music Hall is one of the buttresses that flanks the great portal of the Exposition, the Peristyle. As one approaches the limits of

THEODORE THOMAS, MUSICAL DIRECTOR.

Jackson Park from the water side, the Peristyle, Music Hall and the Casino form the water gateway. It is one of the architectural glories of the whole display. At this point, just to the south of the Manufactures Building, there is an inlet from Lake Michigan

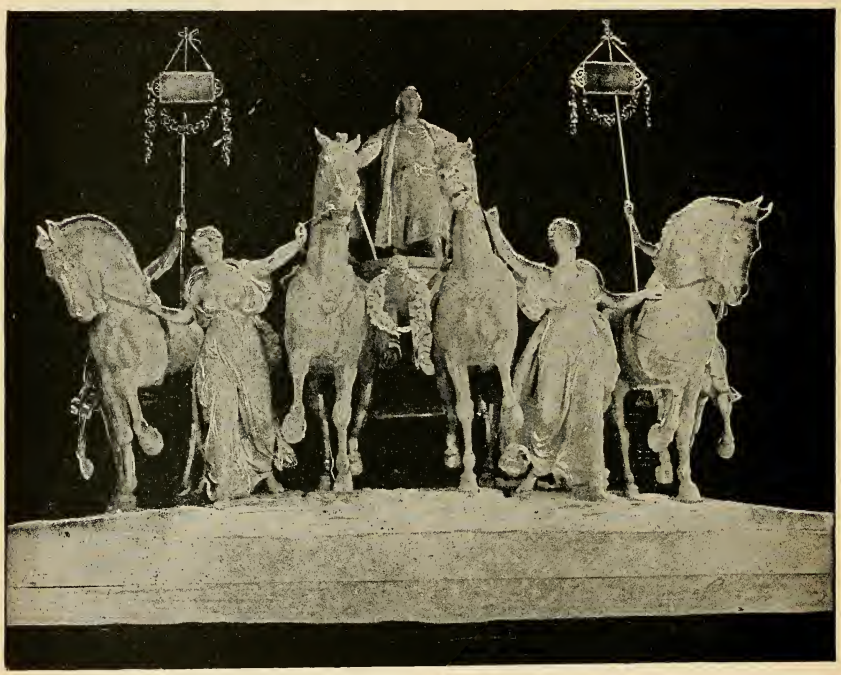
into the inner Lagoon, by way of the Great Basin. On the north side of this inlet, at the edge of the water, stands the temple of Music On the south is the Casino, the centre of the system of Public Comfort, and connecting them, bridging the inflowing waters, extends the Peristyle, a commanding array of monolithic pillars, supporting a great roof, a magnificent arch, and the Columbus Quadriga, one of the most worthy of all the pieces of sculpture on the grounds. The location of Music Hall is thus an ideal one, with the blue waters of Lake Michigan almost washing its walls to the east and north, and the view to the westward passing over the sparkling basin to the buildings which surround the Grand Court.



MUSIC HALL, PERISTYLE AND CASINO.

This architectural composite was designed by Charles B. Atwood, the designer-in-chief of the Exposition, and perhaps is more generally commended after the Gallery of Fine Arts than any other of the Exposition structures. It is all highly Roman in the character of the architecture. Music Hall, at

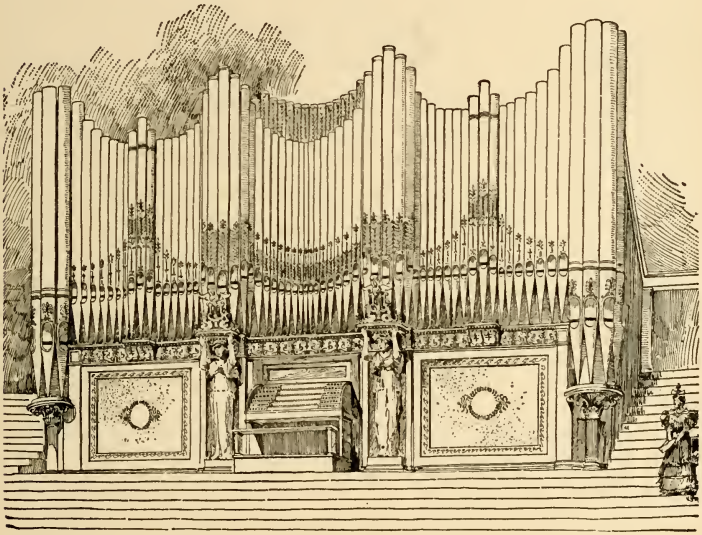
the north end, measures the same as its twin, the Casino, at the south end, 246 by 140 feet. It is of simple and chaste design, exactly suitable for its purposes. The entrances are on the south and west sides, into great lobbies and foyers, with all the accessories of a modern and beautiful opera house. The grand vestibule is of



THE COLUMBUS QUADRIGA, PERISTYLE. (*D. C. French and E. C. Potter.*)

immense size, and with the foyers and promenades is amply able to contain all the people who could be numbered in the largest audience. For this reason the hall has the excellent property of emptying quickly. Adjoining the vestibule are offices and retiring-rooms in sufficient quantity. Music Hall gives seating capacity for between 2,000 and 2,500 auditors, an orchestra of 120 and a chorus

of 300. The stage it will be seen is ample, and the audience-room proportionate. In the rear of the stage are accommodations of the most modern order for participants in the concerts here given, prima donna, chorus singers and orchestra. The dressing and wardrobe rooms are commodious and numerous. The acoustic properties of the hall were found upon test to be of the best, and everything else equally satisfactory. Within the same building is another hall large enough to seat about 500 persons, which is



THE GREAT ORGAN—BUILT BY FARRAND & VOTEY CO.

devoted to chamber music and recitals, in distinction from the more elaborate concerts which are given in the main auditorium.

Festival or Choral Hall is a structure different in everything from the one just described, except in its adaptability to the purposes intended. It is situated in the centre of the western portion of the park, between the north end of the Transportation Building and the south end of the Horticultural Building. Here it looks across the

inner Lagoon to the Wooded Island, and thence in the distance to the great Manufactures Building by the lake. It is simple and severe in outline, following the Doric style of architecture, and presents a spherical form both within and without, like that of an amphitheatre surmounted by a dome. On each of the four sides is a portico covering an entrance, that on the side towards the Lagoon being the principal one. This is supported by fluted Doric columns, six and one-half feet in diameter, and is entered by a broad flight of steps, at the foot of which appear two statues, reproductions of the celebrated ones of Handel and Bach. On the side of the portico are bas-relief panels, representing the progress of music, and over the door are relief portraits of Gluck, Berlioz, Wagner, Schumann, Mozart, Mendelssohn, Bach, Handel and Beethoven. The interior arrangement is that of the Greek theatre, except that the part assigned to the stage by the Greeks is here occupied by the space for the chorus of 2,500. There are no galleries of any kind, but a large foyer extends around the building, giving ample room for a promenade. The auditorium, which seats 6,500, is decorated with plaster relief work and color, with symbolic paintings similar in character to those employed in Music Hall. Between the immense auditorium and the chorus is the orchestra, room being furnished for one of several hundred. In the rear of the chorus is one of the largest organs in the world, built for the purpose, and a magnificent instrument. The retiring-rooms and dressing-rooms are ample here as in the other structure for musical purposes.

When Theodore Thomas was appointed musical director of the Exposition, he received the offer as a sacred trust, saying to the committee through whom it was tendered: "Gentlemen, if you wish me to be responsible for the honor of music at the Exposition, I will accept the position and its obligations." The appointment of Wm. L. Tomlins as choral director followed soon after that of Mr. Thomas. Both appointments were worthy in every respect, for both leaders are educators in the broadest and noblest sense.

The two central ideas around which the musical director grouped all his work were these: First. To make a complete showing to

the world of musical progress in this country in all grades and departments, from the lowest to the highest. Second. To bring before the people of the United States a full illustration of music in its highest form, as exemplified by the most enlightened nations of the world.

The announcement issued by the Bureau of Music read as follows: In order to carry out this conception of the unexampled opportunity now presented, three co-operative conditions are indispensable:

I. The hearty support of American musicians, amateurs and societies for participation on great festival occasions of popular music, and for the interpretation of the most advanced competition, American and foreign.

II. The presence at the Exposition of many of the representative musicians of the world, each to conduct the performances of his own principal compositions and those of his countrymen, all upon a scale of the utmost completeness.

III. A provision on the part of the Exposition authorities of the means necessary for carrying out these plans, in the erection of halls indispensable for successful performances, and in the engagement of solo artists, orchestras and bands.

The entire range of the performances proposed may be grouped under the following classifications:

1. Semi-weekly orchestral concerts in Music Hall.
2. Semi-monthly choral concerts in Music Hall.
3. Six series of international concerts, choral and orchestral, each consisting of from four to six in Festival Hall and in Music Hall.
4. Four series of oratorical festivals by united American choral societies in Festival Hall.
5. Concerts in Festival Hall under the auspices of German singing societies.
6. Concerts in Festival Hall under the auspices of Swedish singing societies.
7. Concerts in Festival Hall under the auspices of Welsh singing societies.

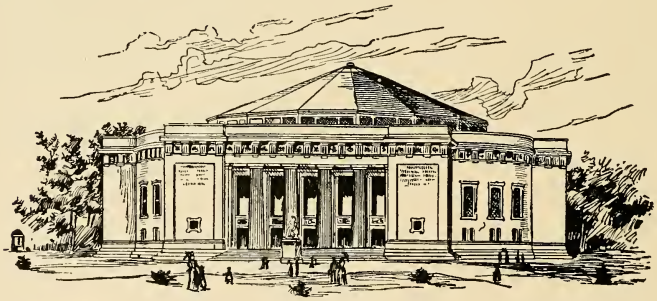
8. Six series of popular miscellaneous festival concerts by American singers.

9. Twelve children's concerts by Sunday school, public school and specially organized children's choruses.

10. Chamber music concerts and organ recitals.

11. Popular concerts of orchestral music given frequently in Festival Hall during the six months of the Exposition.

It will be seen at once that the ideas proposed were most liberal. There was no cessation of the effort to accomplish them. The World's Columbian Exposition directory, after providing the two great music halls, made an appropriation of $175,000. This amount provided a permanent orchestra of 114 players for the entire period of six months. Mr. Thomas organized this orchestra, using the Chicago orchestra as a nucleus. Since the list of concerts during the Exposition, at which the services of an orchestra are required, numbers more than 300, it is at once evident that a permanent orchestra was a necessity.



CHORAL HALL.

Provision was also made for the appearance of the representative orchestras of New York city and Boston. The programs arranged embrace all schools, vocal and instrumental. The popular orchestra concerts, which are free to the public, cannot but be educative in their influence. Mr. Thomas' idea in them has been to make interesting, not trivial, programs of the compositions of representative writers of all countries,

The invitation of the Bureau to choral societies asking them to co-operate, because of their love of art and the pride they have, in the opportunity the Exposition affords, to show to the world, the artistic level of the United States in music, brought many assurances of support. Inasmuch as it would be manifestly impossible for the same chorus to take part in all choral performances, this work was divided among choral societies of the whole country. The musical director assumed that thousands of singers and music-lovers would visit the Exposition in any case, and that they would prefer to appear as contributors, thus conferring an importance upon their societies and their homes. These forces thus directed and guided in combined effort, preparing for their appearance at the Exposition, afford intelligent direction to efforts that in some parts of the country are now being wasted for want of a commanding object of work.

In addition to all that has been outlined, there must not be forgotten the daily band concerts in the stands on the Grand Plaza and in various other portions of the park. These are given, not only at various times of the day, but also throughout the evening, and attract thousands of visitors. Several permanent bands are maintained, while other noted band organizations from other cities have accepted invitations to occupy weeks at the Fair.

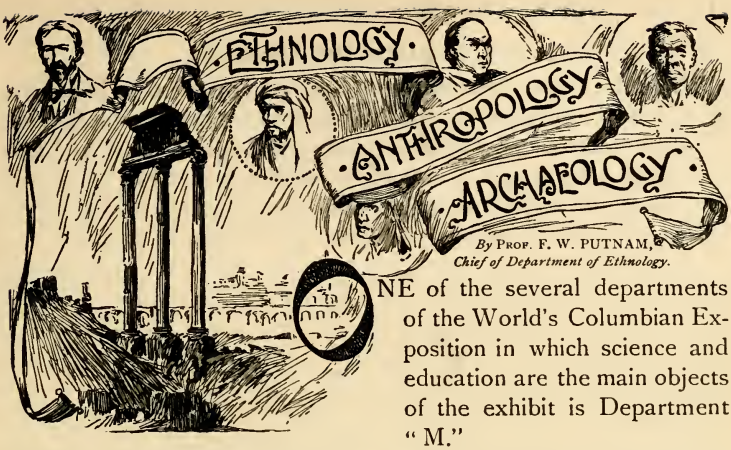
It is useless to attempt to name musicians and vocalists who appear at the concerts, for it includes practically all the more notable ones of this country and many from Europe.

Such, in brief, is the outline of a tremendous undertaking. The attitude of the Exposition toward the art of music has been most liberal, and everything was done that could be done. The best influences were, however, not applied, or were at least unavailing, because of the high prices charged for admission to most of the concerts. A certain short-sighted policy kept the price of tickets out of reach of the masses, with the result that many of the best entertainments were given before practically empty houses. It seemed unreasonable to the layman that he should be charged $1.50 for admission to a concert of two hours' duration within the Fair grounds, when the whole magnificent display of the Fair was

open to him for fifty cents. Through the early months of the Fair there was continual agitation on this subject, and at the time of writing this chapter there is still hope that the prices may be lowered.

A magnificent organ, one of the largest ever constructed, was built by the Farrand & Votey Organ Company, of Detroit, Michigan, for Festival Hall. Its case, which is made of staff, corresponds with the general style of the building, and occupies a space thirty-eight feet in height, twenty-five feet in depth and thirty-four feet in width. It is believed by the builders and by many musicians that the qualities of the organ and many of its novel characteristics will mark an epoch in organ-building. There are 116 stops and 3,901 pipes. The specifications for the organ were drawn by Mr. Clarence Eddy, the noted organist of Chicago, in conjunction with Mr. Votey. It is a triumph of the organ-builder's skill.

By observing the liberality displayed by the Exposition Company to music as an art, it is seen that the idea of the World's Fair is to show justice to everything in the scope of human culture and knowledge. It is gratifying to know that the country appreciates these efforts, and that universal voice declares the World's Columbian Exposition to be the greatest in history.



By Prof. F. W. PUTNAM,
Chief of Department of Ethnology.

ONE of the several departments of the World's Columbian Exposition in which science and education are the main objects of the exhibit is Department "M."

In the fall of 1890, before the site of the Exposition was definitely located in Chicago, a plan was conceived, and presented by request of the World's Fair Committee, for a department which should illustrate early life in America from remote ages before historic times down to the period of Columbus.

The sketch originally outlined has been broadened in so many directions that the department may be said to have outgrown its name, thus giving rise to the necessity of a more comprehensive title for the building in which the department is arranged. The legend over the main entrance, "Anthropological Building, Man and his Works," is very comprehensive and indicates the scope of the department, which not only treats of the moral, mental and physical characteristics of man, but also shows the beginnings of his great achievements in art, in architecture and in manufactures.

The first rude attempts in human art and industry are here illustrated, and form a striking contrast to the splendors of modern civilization so lavishly displayed on every side; and the accumulated results of years of scientific investigation in relation to prehistoric life on the Continent are here brought together and furnish a study which is needful for the full appreciation of the other departments.

ORIGINAL RESEARCH AND EXPLORATION.

When the Department of Ethnology was organized in February, 1891, it was with the understanding that a considerable amount of money should be appropriated for original scientific work and that the results thus obtained should be retained in Chicago as the nucleus of a scientific institution which should be established in the city and should be named the Columbus Memorial Museum. It

ANTHROPOLOGICAL BUILDING.

is hoped that at the close of the Exposition the friends of science will unite in carrying out this plan to endow the city of Chicago with a museum of the natural sciences.

Early in the spring of 1891 expeditions were started out under the direction of the Chief of the Department to various parts of the country. Within the United States several exploring camps were established to obtain new material to represent the archæology of the Ohio valley with its many ancient earthworks, burial-places and village sites, and to make explorations in the Delaware valley to illustrate in the Exposition whatever can be learned of the earliest peoples of the Atlantic Coast of America. Arrangements were made for collecting ethnological material at different points in

British Columbia to represent the life and customs and particularly the religious ceremonies of the different tribes of that region. The Northern Crees of the Saskatchewan valley were also called upon to contribute everything which could be gathered to give us knowledge of this little known people. An exploring party was sent to South America to collect material illustrative of the different modes of burial among the ancient inhabitants of Peru, Chili, Bolivia and the island of La Plata, and also to gather articles buried with the dead to show us something of their life and customs. The plan was conceived and put into execution of having certain typical portions of the Yucatan ruins reproduced in staff on the Fair Grounds. In addition to these special explorations the department joined with expeditions to North Greenland, Labrador, Alaska and Siberia, with the understanding that a certain amount of material should be collected for the Exposition. At this time a section of Physical Anthropology was established, and during the seasons of 1891–92 seventy volunteer assistants were sent out to different parts of the United States and Canada to make a study of the physical characteristics of the different Indian tribes of America, and to gather from them whatever could be obtained to illustrate their life in the olden times before white contact. These assistants were selected mostly from the universities in America, from "Harvard" in the east to "Leland Stanford, Jr.," in the west. Many interesting specimens of costumes, handiwork and trinkets were brought back by these assistants, as well as valuable statistics based on the measurements of 17,000 individuals for the preparation of charts illustrating the physical characteristics of the North American Indian.

GLACIAL EPOCH.

Included in the Ohio State exhibit is an excellent presentation of the glacial deposits of the State, and the earliest traces of man in America—the hotly disputed "palæolithic man." This subject is presented by means of boulders with glacial markings;—maps showing the glacial deposits of Ohio, and indicating the localities where implements have been found; layers of undisturbed gravel from Comerstown and a series of enlarged photographs of the

gravel pit showing the place where the Mills "palæolith" was discovered; photographs of this implement and also of others found in Trenton, New Jersey, and in Europe; maps showing the glacial phenomena in the eastern part of America and indicating the localities where palæolothic implements have been found east of the Mississippi. In the special department exhibit there is one division illustrating this subject by a large collection from the Trenton valley, made during the last two seasons, and also by specimens from the Peabody Museum of Harvard University. This exhibit is intended to show the evidence of the existence of "palæolithic man" in America, and to afford an opportunity of study to all who are interested in this question of such vital importance to archæologists.

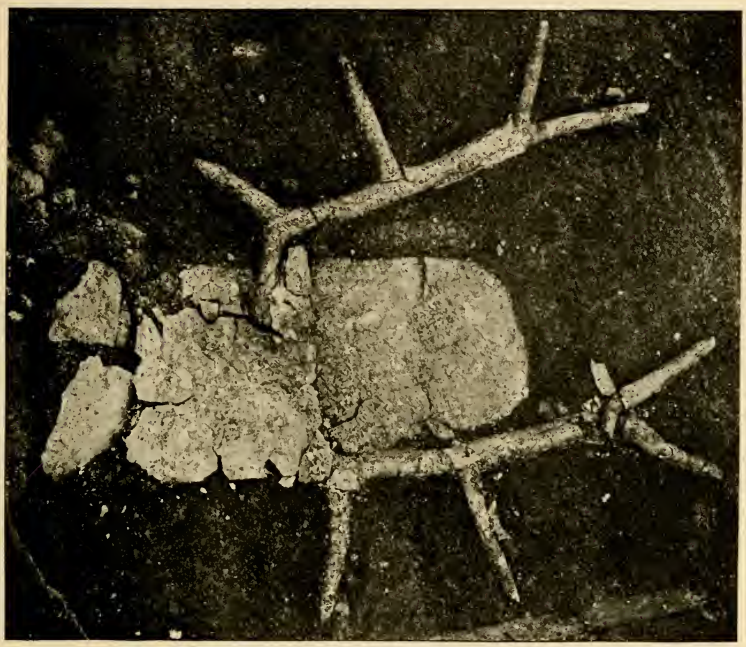
ANCIENT EARTHWORKS, VILLAGE SITES AND BURIAL-PLACES.

The special department exhibit includes a large amount of new archæological material obtained by exploration of ancient earthworks, village sites and burial-places in various parts of the country.

The remains of these prehistoric peoples, who made their dwelling places in different epochs and at different points on the American continent, are so arranged as to afford a comparative study of the various peoples, their migrations and interminglings as well as their development from one period to another. It is fortunate for the student of archæology that these early peoples, of whom history can give us no record, almost universally practised the custom of burying with their dead their household utensils, implements, ornaments and objects of religious significance, thus affording us a clue to their daily life.

The famous earthworks of the Ohio valley are well represented by models and photographs and by the display of the specimens found in or near them. Notable among these collections is that made at the "Clark Works" or "Hopewell Group" in Ross county. Thousands of specimens were taken from these mounds. In several cases altars of clay were discovered. On one of the largest altars was found a large number of ornaments and implements, the greater portion of which were burnt, thus suggesting the

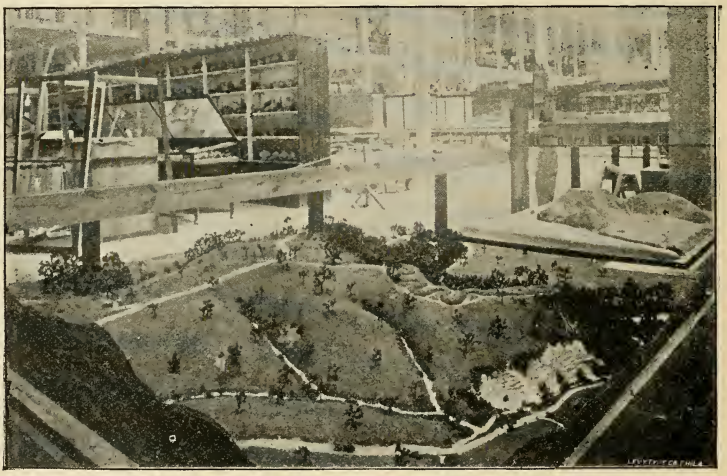
thought that these treasures had been thrown on the altar by the people as an offering to fire in accordance with the rites of ancient fire worship. A sufficient amount of material was secured in good condition to make the collection of inestimable importance in the study of the ancient peoples of the Ohio valley. It is interesting to



HEAD-DRESS FOUND ON SKULL IN MOUND OF HOPEWELL GROUP.

learn of the religion of this people by the evidence of fire worship, and also to notice among their ornaments pieces of copper cut in the form of the Swastika, the peculiar emblem, common in the Old World, to which Schliemann has called particular attention; to observe their love of ornament from the big pile of copper ear-rings, the hundreds of shell and bone beads and the ornaments of slate, shell, mica, and bone; to note their striving after the beauti-

ful in the carvings representing animals, and the ornamental designs in copper and shell and the delicate etching on pieces of bone which would do credit to a modern engraver; to judge of their power and the skill of their workmanship not only by the objects of their handiwork but also by the large collection of beautiful obsidian implements and many of copper and stone. Here also was discovered a skeleton on the skull of which was found an elaborate head-dress shaped like the branching horns of the deer; this was made of wood covered with copper and of large copper plates. Pieces of fabric interwoven with beads and the large quantity of beads found with portions of the skeleton led to the



SERPENT MOUND MODEL.

conclusion that the dress had been elaborately ornamented. The objects buried with this individual also indicated a person of distinction. This collection is especially noted as containing the largest number of flint discs ever found in one deposit or storehouse—about eight thousand. A relief map or model of this group of earthworks forms a part of the exhibit.

Among the earthworks which are shown in model is the famous Serpent Mound with the park surrounding it. As the name implies

this earthwork is in the form of a serpent winding in graceful curves along the brow of a hill overlooking the waters of Brush Creek in Adams county. Everything in connection with this remarkable effigy, constructed with such a vast amount of labor and located on this elevated point surrounded by the most beautiful scenery, tends to the conclusion that this was a sacred spot and probably a shrine of serpent worship among these ancient people, whose village sites and burial-places were discovered near by.

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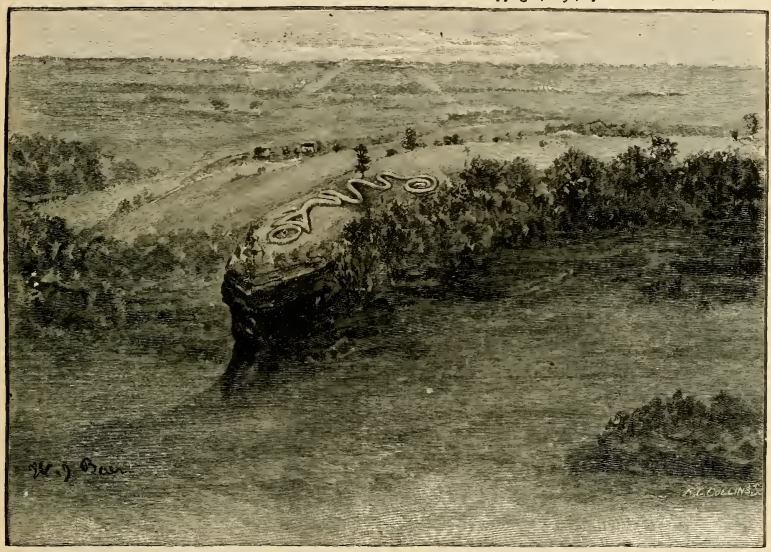


SUNRISE VIEW OF SERPENT MOUND.

The Turner group of earthworks, where ten years' exploration was carried on under the auspices of the Peabody Museum, is also represented by a model. Many remarkable discoveries were made during this exploration, and evidence was collected of an advanced state of art among these ancient peoples. Fire worship and cremation were discovered at this place. Another model is of the fortified hill in Highland county.

Collections from the State Commissioners of Wisconsin, Ohio, Indiana, Missouri, Arkansas and Colorado respectively illustrate the archæology of these States; and Ontario also has an official exhibit of that province. With these and the material specially

INDIAN HOUSES FROM VANCOUVER ISLAND, WITH TOTEM POLES.

gathered by the Department, there is in this section a very complete exposition of American archæology.

PERIOD OF COLUMBUS.

The representation of the period of Columbus is naturally important in connection with the Columbian Exposition. This subject is presented in three distinct parts. In the reproduction of the Convent of La Rabida at Palos, Spain, one scene in the life of Columbus is presented. It was within these walls that he found food and shelter at a time when his enterprise was rejected by the Spanish Court; here his plans were matured and brought to successful issue; here he offered his prayers on the morning when he sailed with his little fleet; and here he returned after his discovery of the New World. This building is filled with relics of Columbus—what-

ever could be obtained in any part of the world pertaining to his life and times. Relics of other early voyagers to America are to be found here, and early navigation is shown by charts, models and instruments. Progress in geographical knowledge is illustrated, and in fact the exhibits in this building furnish an historical record of the Latin American Republics and colonies from the discovery

QUICHUA INDIAN WOMAN WEAVING A SHAWL OR "LLIJLLIA," CUSCO, PERU.

to the present time. To make the scene more complete, the reproductions of the three caravels, Nina, Pinta and Santa Maria, the little fleet with which Columbus sailed on his voyage of discovery, are anchored near the shore.

A strip of land bordering on the water and dotted here and there with the houses and totem poles of the northwest, the bark houses of the eastern tribes, the skin tents, buffalo hide teepees, mat and bark houses of the central tribes, the thatched huts from South America and other characteristic habitations of the native peoples of America, is intended to present a picture of the actual life on the

continent at the time when Columbus first landed on its shores. These rude dwellings are inhabited by representatives of the respective tribes dressed in the costumes of their forefathers and engaged in their characteristic industries. Here is the basket maker, the blanket weaver, the maker of toy birch bark canoes and other trinkets, the silver smith, and skilled workmen in many other branches of native handiwork. From time to time within the several dwellings can be witnessed the native ceremonies and dances from which ethnologists may learn of the strange myths and superstitions which prevail among these tribes. This little colony of native people is not intended for a side show for the amusement of the visitor, but for a scientific study of the first historic people of America. Moreover these people are treated with kindness and consideration and are allowed every opportunity for improvement by observation of the benefits of civilization and education. The Indian Schoolhouse near by, which is conducted by the United States Government, shows to the world what the Indian is capable of when allowed such advantages.

Within the Anthropological Building this period is illustrated by a display of the ethnological material collected by the Department from the different tribes in the United States and Canada, and also by several important State and individual exhibits. This division contains much of importance illustrating the daily life of the peoples who were living on the continent at the time of Columbus.

ANCIENT RELIGIONS, GAMES AND FOLKLORE.

An attractive feature in ethnology is the study of folklore, including the religious faiths and ceremonies, the household tales, traditions and myths, and the evolution of games and toys.

Shrines, idols, amulets and ceremonial objects gathered from different parts of the world are the objects from which we must learn of the ancient religions. One important collection from the University of Pennsylvania teaches us of the ancient Egyptian religion; another illustrates the religion as well as the folklore of China. A private collection from England contains valuable objects pertaining to the Buddhist faith.

All countries and all times have contributed to make the exhibit of games a very instructive and pleasing one, especially as this division treats of the holiday side of life. The evolution of the domino from the dice and the playing card from the domino is illustrated here; the first playing card ever printed in America is shown, as well as all the principal games of the world both old and new.

TRIBES OF THE EXTREME NORTH.

The North Greenland Eskimo are well represented in the Ethnological Section by the material collected by the Peary expedition in 1891–2. Several skin tents were brought down with all their furnishings, even to the deer skins for bedding and the seal intestines to be used for windows. The mode of dress among this people is illustrated by several complete costumes for men, women and children. These garments are made of seal skin, bear skin and deer skin. There are also a number of ornaments of seal skin, of ivory and of walrus tusks. A glimpse of their domestic life is shown in the children's toys, the rude musical instruments, the needle cases with thimbles of walrus tusk and deer sinew for thread, the stone lamps, and the stone, bone and wooden dishes. The occupations and means of livelihood among this people are indicated by sledges and dog harnesses, and canoes or kayaks with full hunting and fishing equipment. Thus by means of this collection of ethnological material, together with a number of skulls, photographs and anthropological measurements, we are able to gain

REVERSE, FIRST AMERICAN PLAYING CARD.

much valuable information in relation to this little known people of the extreme north.

The Labrador Eskimo is also represented by material collected by the Skiles Eskimo Village Company. This village, although

SKIDEGATE VILLAGE, QUEEN CHARLOTTE ISLAND.

carried on by concession, is classified as an exhibit in this department, and the company has kindly loaned one family of the Eskimo to be living in native fashion on the Ethnographical Grounds.

Similar collections from Arctic Siberia and northern Alaska offer the same opportunity of studying these far-away regions. Among the objects which tell of the customs and costumes of the people are sinew fish nets, and seal nets, sealskin travelling bags, and reindeer bags, and whole suits of reindeer garments—hoods, "parkas" or robes, shirts, leggings, socks and shoes. In the Alaskan collections we find many objects which are both novel and interesting as well as descriptive of native life, such as full sets of garments, and other objects, made from fish skin; the fish woman's cone-shaped hat made of a thin piece of spruce steamed and bent and held in position by threads of willow roots; fish nets made of willow bark fibre and of reindeer sinew; the model fish traps, and the totem poles and grave poles with their strange carvings.

Coming a little farther south we find a representation of the early period in the Dominion of Canada, in a special exhibit from the province of Ontario; also a large collection made by the department, consisting of strange-looking idols, masks, head-dresses and numerous objects connected with the life and religious ceremonies of the natives in various parts of British Columbia. Here also is a model of the entire village of Skidegate, Queen Charlotte's Island, including every house and totem pole arranged with scenic background and foreground, making a truthful representation of

PART OF CLIFF DWELLERS' EXHIBIT. *Copyright by H. Jay Smith Exploring Co., 1893.*

this old village, so rich in ethnological significance that he who can translate the symbolic carvings on the totem poles can read the legend connected with each house.

In the out-door section fourteen Indians from Vancouver Island

in their large wooden house are living in native fashion on the borders of South Pond and carrying on their ceremonies and dances. One of the houses from the village of Skidegate is set up on the Ethnographical Grounds; here also are two heraldic columns from Fort Simpson; and the canoes of the Indians on the water.

CLIFF DWELLERS.

The so-called "Cliff Dwellers' exhibit" is classed with this depart-

YUCATAN RUINS.

ment, although carried on by a concession. This exhibit represents "Battle Rock," with the cliff dwellings and caves, mummies, and a museum of articles obtained by exploration. The Colorado State exhibit includes considerable material illustrative of this people, and there is a large private collection from the same region, as well as several relief maps of the pueblos and cliff dwellings.

MEXICO, CENTRAL AND SOUTH AMERICA.

The official exhibit of Mexico affords a representation of the archæology of ancient Mexico, and includes very effective relief maps illustrating the time of Cortez, as well as two model thatched huts of more recent time.

The Department has also an exhibit of Mexican archæology which comprises charts showing the recent discoveries in relation to the ancient Mexican calendar system, twenty fac-simile copies of ancient Mexican shields of brilliant colors, and photographs and objects belonging to the time of the Spanish Conquest.

Costa Rica displays a large portion of the valuable archæological material which formed part of the recent Madrid Exposition. Pottery vessels of various forms, rude images, human heads and other objects carved from stone, gold and copper ornaments and a number of large paintings constitute the greater part of this interesting exhibit.

The ruined cities of Yucatan, with their massive stone structures, symbolic sculptures and hieroglyphic inscriptions, have received especial attention. Ten thousand square feet of molds were taken by the Department expedition during fourteen months of hard labor, with serious risk and some loss of life in the almost impenetrable jungles of Yucatan. The results of this work are shown in the fac-similes erected on the Exposition Grounds. The principal sections which have been chosen as characteristic examples of the architecture and sculpture of these old ruins are "The Portal of Labna," "The Straight Arch of Uxmal," the famous façade of "The Serpent House," and three sections of the "House of the Nuns."

Within the building are many separate pieces of sculptured heads and hieroglyphs belonging to the Yucatan collection, and here also are the reproductions from molds taken during the last two seasons by the Peabody Museum Honduras Expedition at Copan and Quiragua, including casts of the huge stone idols or monoliths, stone heads and bands of hieroglyphs. The famous Charnay collection of casts, and the casts of the sculptured monuments in Guatemala from the Berlin museum, with a collection of large photographs taken by Maudslay during his explorations in Central America, and the enlargements of the photographs taken on the several expeditions of the Peabody Museum add much to the importance of this section, which contains a more complete collection of Central American archæology than ever before avail-

able for the study of these old ruins and their unknown builders. It is hoped that some student will be able to decipher the hieroglyphs and the meaning of the sculptures found in these ancient temples or on their associated monuments, and thus be able to tell us something more of the people than is yet known. One point which

MUMMY FROM ANCON, PERU, WITH OBJECTS FOUND WITH IT.

arrests the attention is the resemblance to Asiatic art particularly noticeable in several stone heads from Copan; and the similarity to Asiatic customs shown in artificial ornamentation of the human teeth found in very ancient graves in Yucatan and Copan.

Chiriqui and Colombia are represented by loan collections of pottery of characteristic designs and many gold and silver objects taken from ancient graves.

British Guiana represents her native tribes by ethnological collections and by a group of her native people living in thatched huts on the ethnographical grounds. Brazil exhibits her Archæology, Ethnology and Natural History, and the Department displays the results of exploration along the western coast of South America for an area of three thousand miles. Important discoveries are

shown from the heretofore unexplored region on the Island of La Plata, and an immense amount of pottery gathered from different points in Chili, Bolivia and Peru show the different shapes and styles of ornamentation which prevailed among these ancient peoples, who lived and died before the time of Cortez. One unique feature of the Peruvian exhibit is a miniature graveyard to show the method of burial at Ancon, where one hundred graves were opened and many mummies taken out, with the innumerable objects buried with them. With these mummies were found cooking utensils with fragments of food, from which we learn that these ancient peoples included in their diet corn, beans, potatoes, peanuts and dried fish. Beautifully ornamented pottery, fish nets, wooden and stone implements, work baskets furnished with needles and pins made from the spine of the cactus, pieces of fabric, musical instruments and toys all tell us of their daily life.

The Indians of the interior of South America are represented by full sets of garments and pottery vessels, and the strange dried human heads prepared by the Jivaros Indians.

The official exhibit from Paraguay contains an excellent collection of ethnological specimens, including objects pertaining to ancient religious faiths, and specimens of native handiwork.

COMPARATIVE ETHNOLOGY AND ARCHÆOLOGY.

In order to gain any real knowledge from the study of archæology and ethnology it is necessary that material should be collected from different parts of the world for the purpose of comparison, and for this reason the foreign exhibits are of the greatest importance. In addition to those already mentioned as comprised on the American Continent, there are many exhibits, either official or individual, from foreign countries.

The Royal Museum of Vienna contributes largely to this comparative study by sending ethnological material from the South Sea islands, a series of weapons from the Sunda islands, musical instruments from India, an Austrian collection, and an African collection.

The official exhibit from Greece consists of specimens of an-

cient Grecian art. An interesting display of the archæology of Japan comes from the Imperial Museum of Japan, and several small private collections show the toys, musical instruments and household utensils of that country. Ethnological specimens from China and Siam are arranged in the Folklore Section. Russia displays the ethnology of her native tribes, and a large exhibit comes from the South Sea islands. New South Wales makes a fine exhibit of large photographs, an assortment of weapons of war and the chase, and numerous articles of dress and household use from the Australasian group. Africa is represented by several private collections, one of which comprises arms, sceptres and other royal insignia of the Zulus on the eastern coast, and silk and feather royal mantles from the island of Madagascar. Another illustrates the Pangur tribes of the western coast, and still others contain articles from the western and central tribes. Two very valuable Egyptian collections are among the loan exhibits in this Department, and a sculptured Assyrian winged bull and winged lion guard either side of the main entrance to the Anthropological Building.

PHYSICAL ANTHROPOLOGY.

It is useless in this short sketch to attempt even an outline of what is comprehended in the Laboratories of Physical Anthropology and the allied sciences of Psychology and Neurology, but it may be interesting to touch upon a few points in this section.

A complete set of apparatus used in research in these sciences is exhibited in the laboratories, and the methods of investigation are practically illustrated. The physical characteristics of the races, and particularly of the North American Indians, are shown in the charts and diagrams prepared as the result of original investigation by the department, and also in a series of skulls and skeletons and models. Among the many interesting deductions to be drawn from these charts are those relating to the stature and head indices of the tribes. It is ascertained, for instance, that the tallest peoples are to be found east of the mountains; and that the shortest are the Eskimo, the tribes of the Fraser river, and the Zuni and Moki; also that in the mountainous regions the stature is generally short.

In regard to the head indices it has been possible to arrive at certain conclusions which are shown by the diagrams.

A large number of universities both in this country and abroad have contributed to this section. The exhibit of the Hemenway Gymnasium of Harvard University includes, in addition to a complete set of anthropometric apparatus, the statues of the typical man and woman which have been made from a series of measurements and photographs.

One important exhibit in this section is that bearing on the physical characteristics and mental and physical development of school-children in America. Charts have been prepared from observations on the measurements of 90,000 children of both sexes, including Italian, Japanese, Swedish, German, Irish and American. One series of these charts shows the results of investigation on the relation of social status to growth in stature and weight of boys, computed from material obtained by Roberts in England, Bowditch in Boston and Key in Sweden. In each of these cases the results show in favor of the higher classes. Another series shows the results obtained from measurements on over 7,000 school-children in Toronto, with the special purpose of investigating the relation of mental ability to physical stature and weight, the result in this case showing in favor of the scholar of inferior ability.

The laboratory which is devoted to Psychology will practically illustrate the study of mental phenomena. The apparatus, methods and results of research in this science are to be seen in the laboratory. Tests are shown of accuracy of movement; sensation of touch; eyesight in relation to light, color and form; visual judgment and distinction; rapidity, accuracy and compass of perception; memory, attention; and many others of similar character.

These psychological tests as well as the anthropological measurements are practically applied in the laboratories.

The laboratory of Neurology contains exhibits illustrating the apparatus, methods and results of study on the nervous system and brain of man. Included in this section and showing the general character of the exhibits are specimens of the central nervous system, and the parts into which the brain may be divided; methods

of recording the weight of the brain and the locality of diseases in it; the anatomy of the brain seen by the naked eye and also by the microscope; casts of dissected brains; photographs of a cross section of a nerve; and fifty plaster casts of the interior of the cranium of men and animals.

In connection with this series of laboratories is a library of general anthropology, including the current serial publications on this subject. On the walls are plans and photographs of the principal anthropological laboratories, and near by are those of the leading ethnological and archæological museums.

HISTORY.

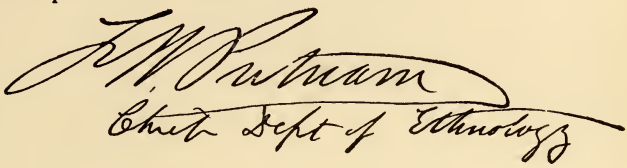
History forms an appropriate adjunct to prehistoric study, but owing to the fact that nearly all the States have placed their historical collections in their State buildings there is only a small section devoted to history. The State of Ohio makes a display of its pioneer days; there is a collection of French and German fire-arms, and among the individual exhibits the division devoted to stamps, coins and medals is the most popular.

NATURAL HISTORY.

As natural history finds no other appropriate place it is arranged in one section on the gallery of the Anthropological Building, and as the various branches of anthropology furnish material for the study of mankind, so, in like manner, this immense natural history museum affords an opportunity for studying the animal kingdom, from the sponges all the way up the scale of animal life. From away back in the past ages the ichthyosaurus, the mammoth and the mastodon have come to join this motley assembly and teach us something of life in geologic ages. The birds and mammals native to the different portions of North America are represented by displays from Canada and from the States of New York, Maine, Pennsylvania, Ohio and Missouri, and by several important private collections. The land and fresh water shells of New York, the insects of Colorado, collections of birds' eggs and birds' nests, and the butterflies of all parts of the world are included in this section.

From this outline sketch of Department M, known as that of

Ethnology, in the World's Columbian Exposition, it is evident that the amount of scientific material brought together from all parts of the world affords a broad field for the study of man and his surroundings, from the earliest times to the present day; and it will undoubtedly awaken a new interest in the problems relating to the origin of man and to his distribution over the earth; while the science of Anthropology in all its branches can but receive an impetus from this comprehensive exhibit.



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Woman's Building

INTRODUCTION TO WOMAN'S DEPARTMENT.

By Mrs. Potter Palmer.

ORIGIN AND PURPOSES OF THE BOARD OF LADY MANAGERS.

The respect wherein the World's Fair of 1893 most markedly differs from all previous Expositions is the participation of women in its management. The principal features of all similar enterprises are necessarily the same, the striking superiority of the Columbian Exposition consisting chiefly in the unprecedented beauty and magnitude of its site, and the advantage accruing from the progress in industry, science and art.

The one essential point of vantage possessed by the present World's Fair has indeed been from the beginning the prominence of women in the making of it. Not merely as contributors to the marvelous display of genius and skill in its many grand divisions, but as a recognized executive factor, invested by Congress with full authority and ample funds. Nor does the material exhibit, eloquent as it is, so luminously represent the great advance of modern thought as does the fact that man's "silent partner" has been invited by the government to leave her retirement to assist in conducting a great international enterprise. Official representation for women upon so important an occasion is unprecedented. In fact no such body as The Board of Lady Managers had ever existed before, and it seems peculiarly appropriate that this honor should have been accorded women when celebrating the great deeds of Columbus, who, inspired though his visions may have been, yet required the aid of an Isabella to transform them into realities. From its organization the Board has fully realized the seriousness of the responsibility resting upon it, and its earnestness at once met

with helpful response. The Directory of the Exposition took the initiative in making an appropriation for the Woman's Building, and

HIDE AND SEEK.

Sculptural Group in front of Woman's Building.

in allowing the Board to call attention to the recent work of women in new fields and to stimulate to greater efforts by selecting from

their own sex the architect, decorators, sculptors and painters to create both the building and its adornments. Then the National Commission vied with the Directory in generosity by placing in the hands of the Lady Managers all the interests of women in connection with the Exposition as well as the entire control of the Woman's Building.

ITS METHODS

Sustained by such support the Board embarked upon its herculean enterprise without a precedent to guide it.

The influence of this national body of representative women soon made itself felt throughout the length and breadth of our great country. Through its agency, women in almost every county of every State and Territory were made members of World's Fair Committees, and thus enlisted in work for the Exposition. Inspired by this success at home, the Lady Managers then had the courage to attempt the establishment of co-operation with the women of foreign countries. The Board officially invited all foreign governments participating in the Exposition to appoint committees of women to co-operate with it. This effort was greatly aided by the active assistance given by the Department of State, and the response was eminently gratifying. The result is even more so, and can only be justly estimated by observation of the exhibits by women of other countries throughout the Exposition, and particularly in the Woman's Building. Spain, France, England, Russia, Austria, Germany, Italy, Holland, Belgium, Norway, Portugal, Japan, Siam, Algeria, Cape Colony, Ceylon, Brazil, Argentine Republic, Cuba, Mexico, Nicaragua, Ecuador and Venezuela are all represented in the Woman's Building, and the committees of all these countries are composed of their most influential and intellectual women. The enthusiasm aroused by the efforts of the Board in Europe was extraordinary. It pervaded all ranks, from the throne to the workshop. In several countries the reigning sovereign became personally the head of the Women's World's Fair Committee. Her Majesty Queen Marguerite of Italy has been especially interested, as has also the Queen of the Belgians and the progressive Empress of Japan. Her Majesty the Queen of Siam has sent a special

delegate with directions that she put herself under our leadership in order to learn what educational and industrial advantages are open to women in other countries, so that Siam may adopt such measures as will elevate the condition of her women. Many similar instances might be enumerated showing the influence of women exerted upon the whole civilized world through the Columbian Exposition. Is it any idle boasting then to say that no organization comparable to this has ever before existed among women? It is official; acting under government authority and sustained by government funds. It is so far reaching that it encircles the globe.

ITS ACHIEVEMENTS.

The admirable purpose expressed by the Queen of Siam very aptly describes the general outcome of women's work for the World's Fair. Through the agency of National and local boards, such evidences of woman's skill in the various industries, professions and arts have been brought together as must convince the world that ability is not a matter of sex. In making this statement the Board disclaims any disposition to place an extravagant or sentimental value upon the work of women because of their sex. On the contrary there is entire willingness to admit the superiority of men's achievements along the lines which have lain for centuries almost wholly in their hands, and who have been carefully trained to meet the responsibilities devolving upon them. It was in consequence of the vivid realization of this that the Board has with ceaseless vigilance endeavored to secure for women the opportunity to show what they also could do, if given the opening. In no other way might woman ever hope to receive the proper recompense for her services than by actual demonstration that in industry, the professions, the sciences and arts, discrimination upon the score of sex was solely the result of mutable conditions. Those conditions, the Board devoutly hopes, will have been greatly altered by the close of the Exposition. The influence of the Board has been efficient in the advantageous installation of exhibits by women, and it has stood as a firm defender of their rights between them and giant manufactories, with means and power, clamoring for every foot of space.

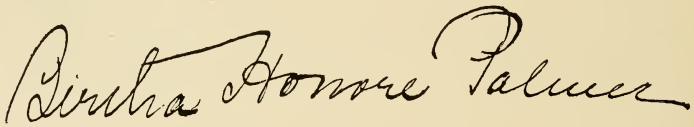
The provision of the Act of Congress that the Board of Lady Managers appoint a jury of her peers to pass judgment upon woman's work was the most significant feature of the innovation of the Board's creation, for never before had it been thought necessary to apply this fundamental principle of justice to our sex. The unusual privilege has been duly valued by the Board, and will be exerted to the utmost in the interests of women. And in the same

DECORATION OF WOMAN'S BUILDING.

connection may be mentioned an additional privilege, secured through the application of the Board to Congress. This is the bestowal upon women artisans of duplicate awards. There is no precedent for this. Up to the present time, at all former expositions, the great firms supplying the materials from which exhibits were made had received the reward; and the humble worker, whose intelligence and skill had fashioned the beautiful or useful thing, remained unrecognized. It is the highly esteemed pleasure of the Board of Lady Managers of the World's Columbian Expo-

sition to correct this inequality. Owing to their precaution in obtaining permission to incorporate in exhibitors' blanks an inquiry as to the proportion of women's work entering into all exhibits they are prepared to ask the name and address of all women whose handiwork wins a prize. The bestowal of these duplicate awards will not only encourage many women bowed under the burden of labor but will be of distinct and very considerable commercial value.

The instances given sufficiently indicate the material benefit accruing to women from the World's Fair, but there will be even a more lasting and valuable result from the interchange of the best thought of the Century between the leading women of all nations, who are now for the first time working together with a common purpose and an established means of communication. Government recognition has bestowed upon these committees of women an official dignity; their work has been magnificently successful, and the reports made of existing conditions among women will become incorporated as valuable public documents among the archives of all countries.



WOMAN'S DEPARTMENT.

IN no previous Exposition has the work of woman been given such entire recognition as in this. For the first time a great body of representative women has shared in the official conduct of such an institution. Almost every woman in the land feels personal interest and pride in the work which has been done. First in importance of all this work is the beautiful structure which houses those features included in the Woman's Department. From beginning to end the Woman's Building, and everything contained in it, has been under the management and design of women. The section of the act of Congress creating the World's Columbian Commission required that body to appoint a Board of Lady Managers, and this was done by appointing two ladies from each State and Territory, eight lady managers at large, and nine others from Chicago. There has been much unfavorable comment upon the somewhat ridiculous title of the board, and, with justice, but the fault is not with the women. Its membership comprises as many representative workers in the active industries of the country as if it were composed of men. There are doctors, lawyers, merchants, farmers and many others of equal activity in the business world among the members. Mrs. Potter Palmer, of Chicago, is the President of the Board, and the tact and great executive ability which she has displayed, although entering this public life from the domain of a rich and prominent society woman, has made her justly celebrated. These women, who are also commissioners, are proud of the fact that they are the first feminine

officials ever commissioned by Congress. It is said that there was never before a building set apart at a World's Exposition for the display of woman's work exclusively.

When the time came to prepare for the construction of the

MRS. POTTER PALMER.

Woman's Building, a large prize was offered to be awarded for the successful design in competition. Fourteen women architects, not one of them more than twenty-five years of age, submitted designs for the structure to the scrutiny of the Board of Architects of the

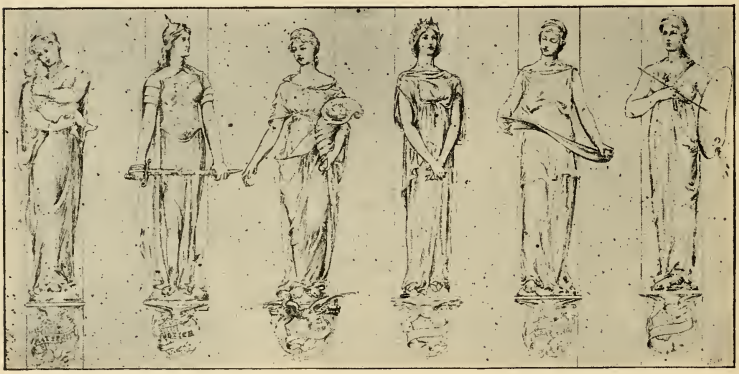
Exposition, and that of Miss Sophia G. Hayden, of Boston, was accepted. It is true that not all of the women interested in the Woman's Department concur in the choice of the architects, nevertheless the building has been the subject of very general admiration. The same architect also executed the design.

BOARD OF LADY MANAGERS.

1. Mrs. M. R. M. Wallace. 2. Mrs. Matilda B. Carse. 3. Mrs. Potter Palmer. 4. Mrs. Myra Bradwell. 5. Dr. Frances Dickinson. 6. Mrs. Susan G. Cook. 7. Mrs. J. S. Lewis. 8. Mrs. J. A. Mulligan.

The building measures 388 x 199 feet, and its cost was nearly $150,000. The building is situated north of the Horticultural Building, and near the opening into the grounds from the Midway Plaisance. Its east front faces the Lagoon, which here opens out into a broad bay and forms a beautiful waterscape. From the center of this bay a grand landing and staircase give access to a terrace six feet above the water; crossing this terrace and ascending other staircases, one reaches the ground four feet above, on which, about 100 feet back, the building is situated. The first terrace is designed in artistic flower-beds and low shrubs. The style of the building is Italian renaissance. The first story is raised about 10 feet from the ground line, and a wide staircase leads to the centre pavilion,

This pavilion, forming the main triple-arch entrance, with an open colonnade in the second story, is finished with a low pediment enriched with a highly elaborate bas-relief. The corner pavilions have each an open colonnade above the main cornice. Here are located the "Hanging Gardens." Entering the building one finds himself in a lobby, forty feet wide, which leads into the open rotunda, 70 x 65 feet. This reaches through the height of the building, and is protected by a richly ornamented skylight. The rotunda is surrounded by a two-story open arcade. This arcade is delicate and chaste in design, and gives a thoroughly Italian court-yard effect. On the



FIGURES IN WOMAN'S DEPARTMENT, ILLINOIS STATE BUILDING.
Designed by Julia M. Bracken.

first floor is located a model hospital and a model kindergarten. The whole floor of the south pavilion is devoted to the retrospective exhibit, and the one on the north to reform work and charity organization. The curtain opposite the main front contains the library, bureau of information, records, etc. In the second story are located ladies' parlors, committee-rooms and dressing-rooms, all leading to the open balcony in front. The whole second floor of the north pavilion encloses the great assembly-room and club-room; the first of these is provided with an elevated stage for the accommodation of speakers. The south pavilion contains the model

kitchen, refreshment-rooms, reception-rooms and other home-like arrangements.

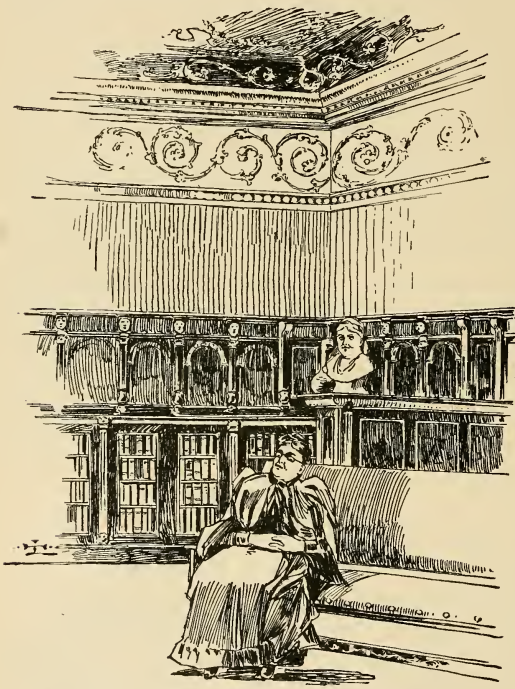
There were more than a dozen competitors for the sculpture work of this building, and Miss Alice M. Rideout, of San Francisco, was successful in winning the prize. There are three divisions of this work. One is a group of figures in high-relief, which fills the pediment over the main entrance to the Woman's Building. This pediment is 45 feet long at the base line and 7 feet high at the centre. In addition to the pediment there are two groups of statuary above the attic cornice, and these consist of central winged figures, 10 feet high, supported by smaller sitting figures. They are typical of woman and woman's work in history. The beautiful group illustrative of "Woman's Virtues" includes figures representing "Sacrifice," "Charity," "Maternity," and "Love." Other beautiful groups are: "Woman as the Spirit of Civilization," and "Woman's Place in History."

A great portion of the material for finishing the interior of the building was contributed by women of various parts of the world. Fine woods and marbles, with such other materials as could be utilized, were offered and accepted in profusion.

The decorations of this building were all planned and executed by women, with the exception of the mere manual labor of placing

CHILDREN'S BUILDING.

the staff upon its exterior, and the plaster and canvases for the painting, etc., upon the interior. At the end of the gallery of honor are two mural paintings, each fourteen feet wide by fifty-eight feet long. Miss Cassat is the artist of one, representing "Modern Women," and Mrs. MacMonnies of the other, representing "Primitive Women." On each side are two panel paintings, also by women artists, and of decided merit. Those on the south side represent a group of Puritan maidens, painted by Mrs. Sherwood, and her sister, Miss Emmett, while those on the north side are the work of Mrs. Fairchild and Mrs. Sewell. The drapings between the panels and end paintings are of gold-colored cloth, forming an effective background for the canvases. A broad gold frieze surrounds the gallery, and on the panels between the arches are inscribed the names of famous women.



A CORNER IN THE LIBRARY—WOMAN'S BUILDING.

The library ceiling was decorated by Mrs. Dora Wheeler Keith, the central group consisting of two male figures and one female figure, representing Science, Romance and Imagination. The four corner paintings illustrate four departments of literature, while the

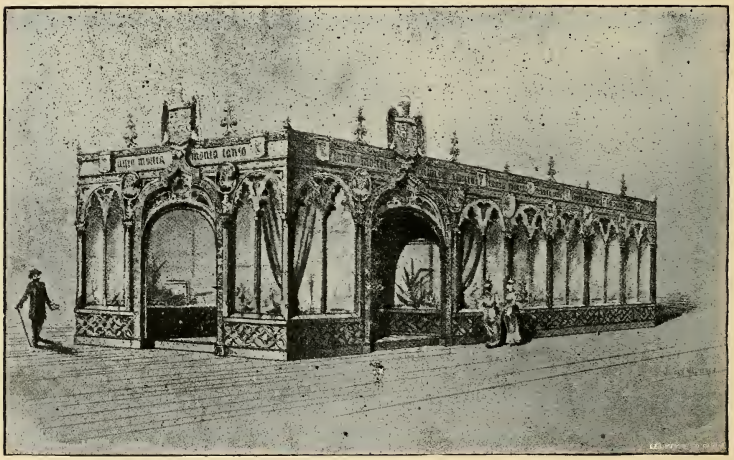
whole design is connected by a band of small winged cupids and cherubs, twining garlanded wreaths of flowers with the flowering draperies. In this room are books by the women authors of the world, and autographs, on screens, of many of the most famous

PART OF FRENCH EXHIBIT.

women. On each side of the doorways are canvas panels, 5 by 9 feet, bearing figures representing the occupations of women.

Many foreign countries are represented in this building, while women's industries are exploited in full. In the southwest corner of the first floor is the French exhibit, which contains much of interest, and adjoining it are the displays of Mexico and Italy. Germany is in the southeast corner, and near is the display of Ceylon. The same curiously carved pillars of beautiful wood are seen here which characterize the exhibit of this island in other departments. Spain occupies a prominent place in the south end of the building,

with a staff pavilion of Moorish design. In the collection is the sword of Her Majesty Isabella of Spain, the patron of Columbus. It has been preserved in the Royal Armory at Madrid, and, together with a portrait of Isabella and some jewels which belong to her, occupies the place of honor in the Spanish women's exhibit. Adjoining Spain are exhibits from the Cape of Good Hope, Siberia, Siam, Norway and Sweden. The Japanese exhibit, which is also located in this section, contains vases, screens, etc., all made by women. Sections devoted to Austria, Belgium, India and Brazil complete the southern end of the building.



SPANISH SECTION.

Passing northward through a corridor one enters the main rotunda of the structure, where is displayed a loan exhibition of paintings and statuary. On the west wall of the rotunda are the following, among other fine paintings: "Female Portrait," by A. E. Klumpke; "Female Figure," by Enilda Q. Loomis; "Oriental Female Figure," by K. A. Carl; and "Children Blowing Bubbles," by the same artist; "Female Figure," by M. H. Carlisle; "Eurydice Sinking Back to Hades," by H. Roe; and an "Army Scene" and "Female Figure," by Louise Jopling. On the east side are

the following: "Marine View," by Elodie Lavilette; a "Female Figure," by Louise Addema; "Flowers," by Jenny Villebesseyx; "Girl and Boat," by Euphemie Murciton; "Music," by Maximilienne Guyon, and "An Interior," by I. Buchet.

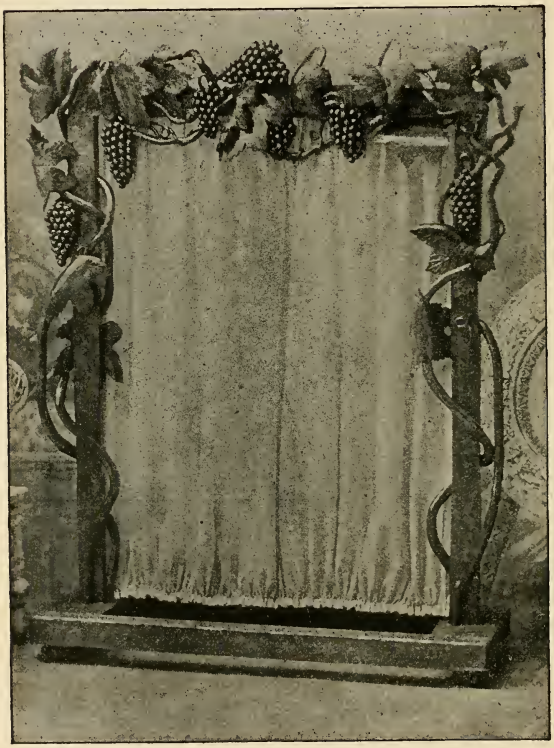
Ascending the staircase at the southeast corner, one finds at the

ROTUNDA OF WOMAN'S BUILDING.

entresol landing a case of dressed dolls, and at the head of the staircase are the board rooms. In these are many portraits and some other paintings. A neighboring door admits one to the Australian section, where the antipodean women make a fine display. In the American section are American female college exhibits, among which are represented Smith, Vassar, Wellesley, Bryn Mawr, Laselle and others. On the west side of this gallery floor are three rooms, the centre one a finely decorated library already mentioned. The furnishing of this room was assigned to the State of New York. In the northwest corner are the cooking school exhibits, and next on the right a fine assembly room. Here is

a beautiful set of benches, desks, tables, etc., sent from Mobile, Ala. There are also some fine portraits displayed.

On the east side, as one goes toward the southern end of the building, are the Japanese rooms, decorated with bamboo screens and panels. The ceiling is also finely decorated. The rooms of California, Cincinnati, Kentucky and Connecticut come next, all handsomely decorated.



WOOD CARVING.—*Exhibited by Mrs. M. E. Tarrant.*

Owing to the large number of displays, it is impossible to mention more than a few of them. Cincinnati makes a strong showing in paintings and ceramics, such artists as Miss Low, Miss McLaughlin, Miss Guysi, and others being represented. Mrs. Plympton and Mrs. Stover, in ceramics, and Mrs. Valentine and Miss Fry in sculpture, show marked ability. Mrs. Anna F. Cameron, of Nebraska, is the artist of the handsome Electrolier. England's women artists have a splendid

collection of their works. There are stained glass windows by several artists, including Miss Sears, of Boston.

The exhibits by the women of foreign nations consist of laces, embroideries, oil-paintings, water-colors, carvings, books, etc. Each country, however, has its peculiarities, as, for instance, Mexican women contribute fine feather works and similar fabrics; the women of Fayal send delicate needlework on silk and linen; the French display embroideries, raised work, and similar decorations;

A CORNER OF THE ORGANIZATION ROOM.

the Armenian Christian women unique but exceedingly fine work, and Turkish women exquisite embroidery.

In addition to the rooms we have named on the ground floor, in the north end are the sections devoted to England, Russia, Australia, Ireland and Scotland. There is a stained-glass exhibit, a dressmakers' exhibit, a corn palace, a collection of paper flowers, an

educational room, rooms for the display of inventions and discoveries, and the Smithsonian Indian and African rooms.

The main parlor on the east was decorated and furnished by the women of Cincinnati. The assembly room, at the north end of the gallery, is the favorite meeting place of women throughout the Exposition. Here are given instructive talks by noted women, the daily lectures including subjects embracing philanthropy, literature, domestic science, and indeed every topic in which women are interested and which is illustrated in the Exposition.

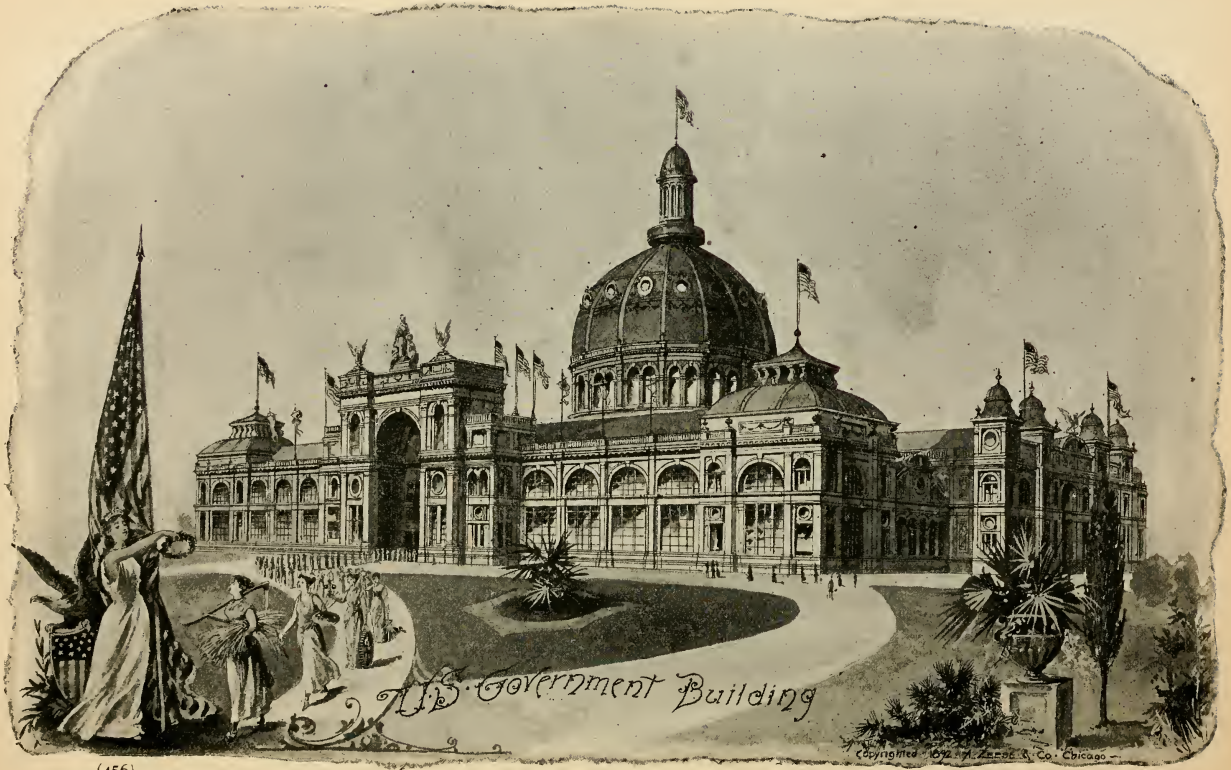
MARBLE BUST OF MRS. POTTER PALMER—WOMAN'S BUILDING.

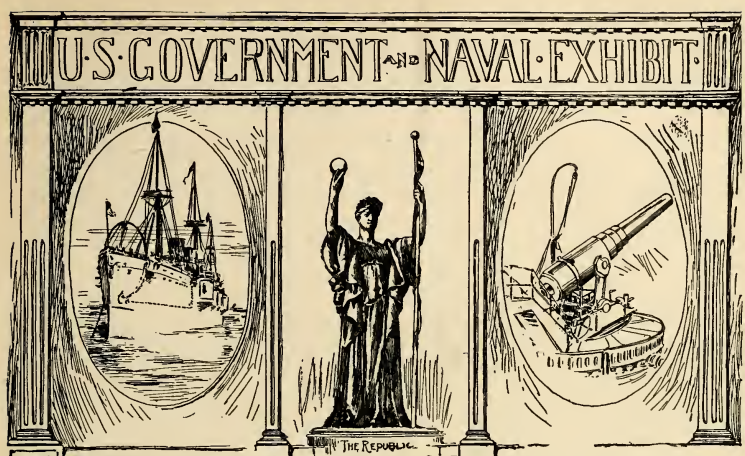
The association room at the opposite end of the gallery is the headquarters of the strongest and most influential organizations of women. The Women's Christian Temperance Union and other noted bodies have locations here. The loan collection in the main gallery includes the priceless laces of Queen Marguerite of Italy, which were permitted to come to the Fair as a mark of special favor to the Board of Lady Managers. They had never before left Italy.

In various parts of the Woman's Building are booths and rooms for the sale of articles produced by women, either of utility or beauty. They include fabrics, books and other souvenirs.

The organization of the Board of Lady Managers was excellently chosen, and the officials of the board, from the day of their elec-

tion, have been active in everything that would promote the interest of the Exposition, of women and of their own display. Their president, whose contribution to this record of the Exposition precedes this chapter, has used every means in her power and the great opportunities given her to do this work. She is also the president of the Woman's Branch of the World's Congress Auxiliary, and with social duties in the hours of pleasure, and professional duties for the Exposition in hours of business, her time has been indeed occupied. Her beautiful home has offered constant hospitality to prominent guests of the Fair, including the Duke and Duchess of Veragua, and the Infanta Eulalia, with their suites, as well as many others. She has won fame and favor from the women of our country, as well as friendship and admiration.

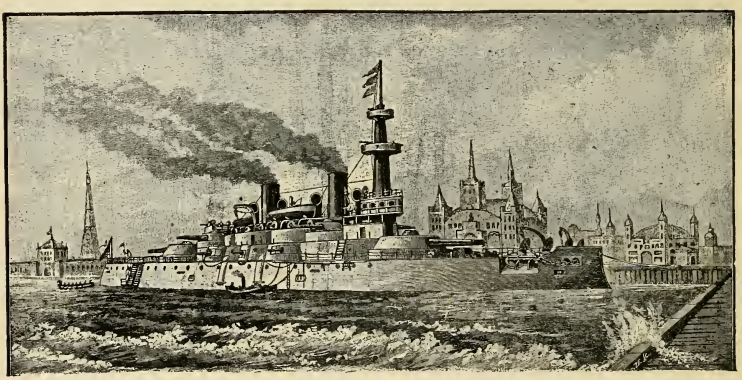

U.S. Government Building
Copyrighted 1892 A. Zeese & Co. Chicago.



THE exhibits made at the Exposition by the United States Government are of an exceedingly varied character, and they include several different structures in addition to the one which is known as the United States Government Building. This building, however, is the focussing point of the exhibit and should have the first attention. It measures 415 x 345 feet, and cost more than $400,000. It is situated exactly between the buildings for Fisheries and for Manufactures, facing the Lagoon toward the west and Lake Michigan toward the east. Between the building and the Lake is that great open lawn known as the Government Plaza—the largest area available for drills contained within the Exposition grounds. The building is classic in style, and bears a strong resemblance to the National Museum and other government buildings at Washington. It is constructed of iron and glass. The leading architectural feature is an imposing central dome, 120 feet in diameter and 150 feet high, the floor of which is kept free from exhibits. Toward the north, a bridge over the Lagoon connects it with the Fisheries Building, which in its nature is semi-governmental in character. The south half of the Government Building is devoted to the exhibits of the Post Office Department, Treasury Department, War Department and Department of Agriculture. The north half is devoted to the exhibits of the Fisheries Commission, Smithsonian Institution and

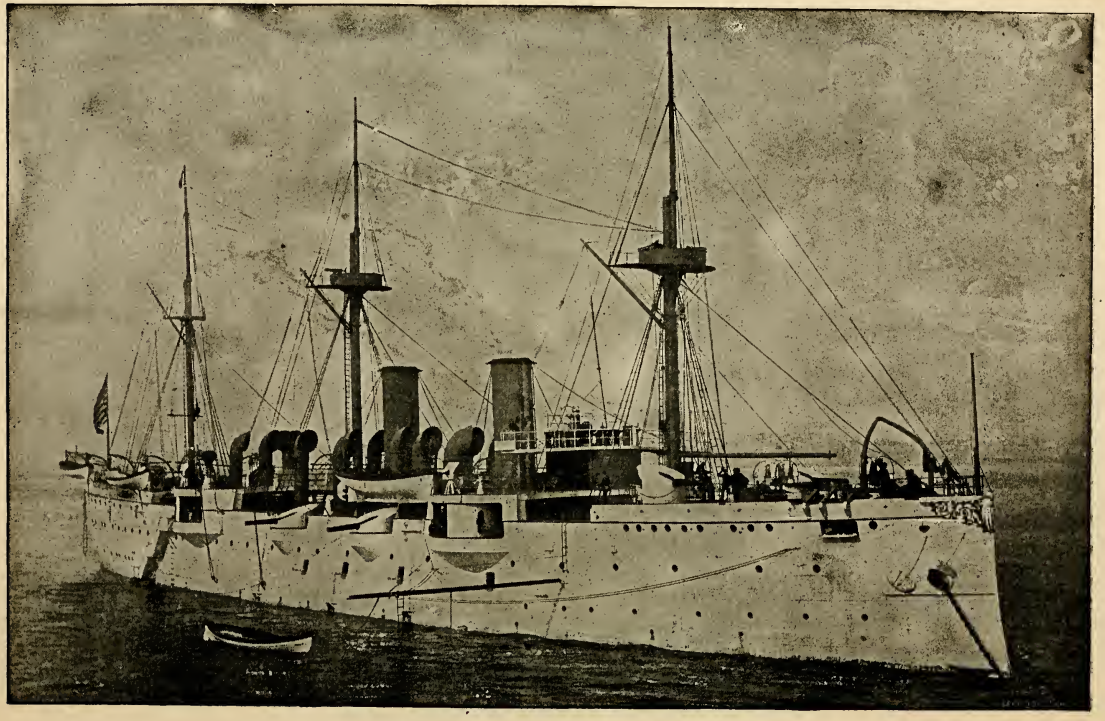
Interior Department. The State Department exhibit extends from the rotunda to the east end, and that of the Department of Justice from the rotunda to the west end of the building.

The second of the great structures erected by the United States Government, and one which to many is of far greater interest than almost anything else on the grounds, is the model Battle-ship for the exhibit of the United States Naval Department. This is a structure which, to all outward appearances, is a faithful, full-sized model of one of the new coast-line battle-ships. It is erected on



UNITED STATES BATTLE-SHIP.

piling, on the lake front, in the northeast portion of Jackson Park, near the Government Building. Water surrounds the iron-clad sides of brick, and the structure has every appearance of being moored to a wharf. Upon its decks are all the fittings that belong to the actual ship, such as guns, turrets, torpedo tubes, with boats, anchors, cables, awnings, etc. Officers, seamen, mechanics and marines are detailed by the Navy Department during the Exposition, and the discipline and mode of life on our naval vessels are completely shown. The crew gives certain drills, especially boat, torpedo and gun drills, as in a vessel of war. The dimensions of the structure are the same as those of the actual battle-ship of which it is a model; 348 feet in length, 69 feet and 3 inches width



U. S. CRUISER PHILADELPHIA. (*Model Exhibited.*)

amidships, and from the water line to the top of the main deck, 12 feet. Centrally placed on this deck is a superstructure 8 feet high, with a hammock berthing on the same 7 feet high, and above these are the bridge, chart house and the boats. At the forward end of the superstructure there is a cone-shaped tower called the "military mast," near the top of which are placed two circular "tops" as receptacles for sharpshooters. Rapid-firing guns are mounted in each of these "tops." The height from the water line to the summit of this "military mast" is 76 feet, and above is placed a flag-staff for signalling. The battery mounted comprises four 13-inch breech-loading rifle cannon; eight 8-inch breech-loading rifle cannon; four 6-inch breech-loading rifle cannon; twenty 6-pounder rapid-firing guns; six 1-pounder rapid-firing guns; two Gatling guns, and six torpedo tubes or torpedo guns. All of these are placed and mounted respectively as in a genuine battle-ship. On the starboard side of the ship is shown the torpedo protection net, stretching the entire length of the vessel. Steam launches and cutters ride at the booms, and all the outward appearance of a real ship of war is imitated.

Returning now to the main structure devoted to exhibits of the United States Government, we find material worthy of examination in the decorations of the dome. Around the interior of the dome runs a frieze composed of cupids bearing grain, fruits, flowers, etc., emblematic of the productions of the country. On the ground floor are panels adorned with national trophies, and on the gallery floor are eight panels representing the leading industries of the North, South, East and West, and the various industries of each section. The North is represented by "Commerce," the West by "Agriculture," the South by "Cotton and Fruits," and the East by "Art and Science." Of the other four panels, one represents tapestry work, one wood and stone work, one ceramic work, and one metal work. Over the south door is a painting representing the cave-dwellers; over the north, one typifying the triumphs of liberty; over the east, a birds-eye view of Chicago in 1893; and over the west, Chicago in 1492. Outside the building, over the east and west entrances, are

two pieces of statuary called the "Liberty Groups," by A. Waagen, and huge bronze eagles surmount the pediments of all the entrances.

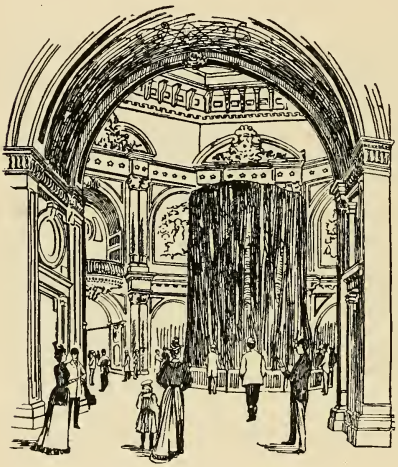
While it is true that the architectural beauty of this structure wins little favor, and is thought by some to be a minus quantity, yet it cannot be denied that it is thoroughly well adapted to the purposes for which it is intended. And it is also true that if a vote were taken by all visitors as to which building of the Fair contains the most interesting exhibits, this one would not fall far behind in the contest. Every great department of the United States Government has here

U. S. ARMY HOSPITAL.

objects of immense interest to all, and there is little that is not worthy of attention. The War Department occupies the southeast corner of the building, and its exhibits are classified in sections as follows: Signal Bureau; engineer section; ordnance section; gun-making machines; cartridge and stock-making machines, and relics of interest. Here is one of the most interesting displays ever gathered of weapons of every kind. Our big guns, such as the new breech-loading mortars and huge rifled cannon, 33 1-2 feet in length, attract great crowds. They do not compare with the big Krupp gun, though they excel in rapid firing, the largest being loaded and fired every two minutes. One of the mortars is ten feet in length

and has a twelve-inch bore. Its projectile weighs 630 pounds, and its range is seven miles. The largest of the cannon weighs 116,000 pounds, and requires a charge of 460 pounds of powder to fire its 1000-pound projectile. Its effective range is ten miles, and every time it is fired it costs the Government $1,000.

The smaller arms used in war, such as rifles, revolvers, sabres, bayonets, etc., make an interesting display, and the old discarded patterns which were used in our early warfare are quite unique.



DOME OF GOVERNMENT BUILDING, SHOWING CALIFORNIA REDWOOD TREE.

There are dummies dressed to display the uniforms of the army from its first organization to the present time, including the uniforms of all ranks, from privates to generals. Figures of mules and horses harnessed to wagons, ambulances and field pieces may be seen; but the chief display in this line is the group composed of Major-General Scofield and staff, in gorgeous uniforms. Historic battle-flags, and a complete outfit of every species of standard used by the government, are exhibited, as well as camp and garrison equipage and furniture, tools, band instruments, etc. An old forage wagon, originally with the army of the Potomac, which has travelled many thousands of miles, is a striking feature of the War Department exhibit. There are shown cannons captured from the British and the Mexicans, some of them very quaint and old-fashioned. The same department includes an exhibit of veterinary articles, displaying skulls, bones, etc., indicating various diseases to which the horse and mule are subject.

The Departments of State and Justice occupy but little space,

although what they do show is of most interesting character. There are portraits of all the chief-justices of the Supreme Court, including Marshall, Taney, Ellsworth and their successors, to the present day. All the attorney-generals also appear. There is a large chart showing in different colors all of the United States judicial districts. There are treaties and other important documents in the State Department exhibit. A photograph copy of the Declaration of Independence is the great centre of attraction.

The northeast corner of the building is occupied by the Department of Agriculture. Its exhibits include sections devoted to the display of vegetable fibres, tobacco, silk, cotton, tea and wool; the division of ornithology and mammalogy; cereals; the bureau of animal industry; the forestry division; the division of microscopy; vegetable pathology; pomology; botany and chemistry. There is a beautiful collection of tree stumps, one of edible and poisonous fungi, and one of predatory animals stuffed. There are wax reproductions of plants, berries, and harmful and useful insects. A room in the corner of the building contains cases and portfolios of botanical specimens and photographs and other illustrations.

The great dome of the building covers what will be to many visitors the greatest curiosity of the Exposition. This is a portion of one of California's giant redwood trees, which is situated exactly in the centre of the rotunda. The section is thirty feet tall and twenty-three feet in diameter. This portion of the tree had to be cut into three pieces before it could be handled. Two of these are each fourteen feet long, and the other one but two feet. The two long sections were hollowed out, and the spiral staircase runs from the bottom of the lower to the top of the upper one, the two being separated by the short section which forms a floor between them. Before the tree from which these sections were taken was cut it was nearly four hundred feet in height.

The rotunda itself, in which the tree stands, is a beautiful creation of the architect's and painter's art. There are eight entrances to it through high arches upheld by groups of pillars on each side. These pillars are of steel, but are colored to represent vases of chocolate marble streaked with white, from which rise tall fluted

shafts of malachite marble topped with gilded capitals. Each arch entrance looking inward from the second floor has a balustrade of ornamental iron work. The dome is colored a pale blue, and upon the panels ornamenting its sides are beautiful figures representing the arts and sciences. The general tone of the interior of the dome is light brown with a tracing of gold arabesques and other figures.

The centre of the north side of the building is occupied with the exhibits of fishing appliances shown by the United States Fish Commission. Suspended from the gallery is an Alaskan war canoe hollowed out of a solid tree trunk and painted with barbaric designs in red, black and white. The model is a fine one, and exhibits for the constructors a high degree of skill in marine matters, and its decorations, while they evidence the savage, yet show considerable artistic taste. At the prow, looking inward, is a carved figure to represent some deity of fishing or navigation, and at the stern, looking outward, is another. The latter has a frog's body with a wolfish sort of head, and is repulsive enough to frighten any enemy who might be in pursuit. At various other points around this portion of the gallery canoes are hung, showing all differences of type, from the ordinary one to one of walrus hide stretched on a wooden frame, and presenting a curious similarity to a structure of thin bone. Rising from the highest central point of the gallery is a representation of a ship's top-mast, with a lookout holding a spy-glass and standing in the rigging. This is to represent the manner of watching for whales in the whale fisheries of the north. To the right of this figure a bowsprit projects from the gallery, and at its extreme end stands a sailor ready to cast a harpoon. To the left, the bow of a whale boat seems starting from the gallery, another dummy, dressed as a harpooner, aiming his lance for a death thrust.

The first thing one meets in the fisheries exhibit is a representation of contrast of a kind familiar to all fishermen. First there is a fancifully equipped angler, armed with an elegant split bamboo rod, a reel, a landing net, a fly book, a creel, and all other modern appliances for expert fishing. He is wading along in a trout stream. A little farther on is a barefooted negro resting against the stump

of a tree, a common willow pole in his hands, to which is tied a cotton fishing line with a pin-hook on it. The darkey's head is thrown back and he is fast asleep, evidently enjoying the heat of the broiling summer sun. It is a frequent remark by those who see these dummies that in real life it would be safe to bet that the first one would buy all the fish he got, from the second.

Rods, reels, boats, oars, lines and hooks of every sort and from every clime are here displayed. Every species of artificial bait is represented, from the mother-of-pearl and walrus ivory minnows, of the Alaskan Indians, to those made of feathers, gum and metals by their more civilized brothers. In the line of hooks, the carved wood halibut hooks of the Alaskans are the most curious. Each hook bears the image of a fetich.

The colored plates of every variety of our food fishes are very fine and true to life. There are photographs of fish, rivers and fishing scenes, and along the cornice to the south of this display are representations of seal rookeries. The seals on the beach being driven inland are shown, as well as their killing, and finally their skinning. There are photographs of stranded whales, of the cleaning, washing and drying of sardines, stuffed water-fowl of all kinds, a fully equipped whale boat that has been in actual service, and casts of all kinds and sizes, of fish, herrings, mackerel, halibut, flounders, narwhals, sharks, porpoises, etc. All of these dummies are made of a composition of glue, glycerine and another ingredient which is secret. They are much more lifelike than wax or plaster, resembling the texture of human flesh, not only in looks, but in feeling and elasticity. The fish are perfect reproductions, even the changing hues of the live ones being represented. In the same exhibit is an Alaskan bear trap. It is composed of a piece of whalebone about sixteen inches long, sharpened at each end, folded four times and tied together with sinews. These are wrapped in fat and placed where the bear will find them. They are eaten greedily; the gastric juice of the bear's stomach dissolves the sinews and the whalebone straightens out, piercing the viscera of the bear and killing him. In one section is a row of glass cases showing the

different kinds of rigs of every fishing boat used; also boats with wax dummies showing the various methods of fishing.

The northwest corner of the building is occupied by the Department of the Interior, including spaces devoted to exhibits of the patent office, geological survey, census office, land office, and bureau of education. In the patent office, models of numerous inventions are shown, chiefly interesting from the comparative exhibit of the first crude invention, and every intervening link between it and the latest improved model. Thus the old-fashioned spinning wheel with its single spindle is shown at one end of the line, at the other end of which is the power spinning jenny with its one thousand spindles, all in motion at the same time. Along the south wall of this display is the most interesting of the exhibit, consisting of cases of fire-arms, from the old-fashioned flint lock muzzle loader to the latest patented repeating rifles.

The geological survey exhibits include displays of relief maps showing sections of the country, with rivers, lakes, elevations of mountains, etc., all true to scale. The centre piece is a connected and mounted skeleton of the dinoceras, a prehistoric animal which partook of the nature of the mammoth and the hippopotamus. There are framed glass transparencies upon which are colored pictures of the mountain and canon scenery of the far West. Cases of geological specimens contain beautiful masses of colored stones and jewels, some of great rarity.

Next south of the Department of the Interior comes the Post-Office Department, an exhibit which appeals to every one, so closely are its interests connected with our daily life. In the extreme southwest corner of the building a large space is devoted to a model post-office, which is in active operation as a branch of the Chicago post-office and serves the entire Fair grounds with mail. This is no small undertaking when it is remembered that the exhibitors, officials and employees number many thousand. Adjoining the model post-office is a full-sized modern postal car showing all the methods of railway service, including clerks working with the most improved appliances. In addition to the mail car there are shown all other means of mail transportation. These include

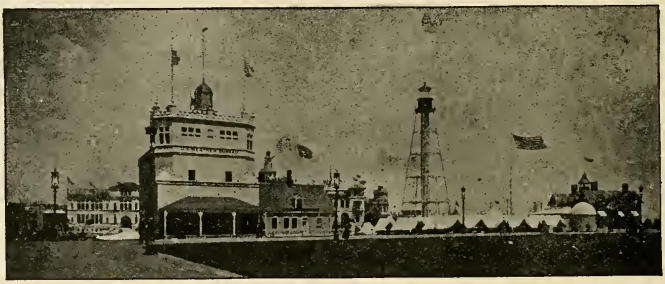
paintings of mailing scenes, models of river, lake and ocean steamers, old-fashioned stage coaches with mail boots, wagons for transporting mail from post-offices to trains, etc. Among the dummies in this division are represented a city carrier, a railway mail service man, a horseback carrier in Western costume, a mountain carrier equipped with snowshoes and a dog sledge and team. It is a great surprise to most people to find that Uncle Sam employs so many varied means of transporting the missives which are committed to his care. One drops in a letter-box an envelope bearing a two-cent stamp and thinks no more about it until an answer returns to him. Yet thousands of men, and immense wealth share the task of providing this perfect service.

The Treasury Department has a Mint exhibit, showing a collection of all the coins ever issued by the United States Government, including proof coins, dies, designs and appliances of various kinds. The Internal Revenue exhibit is also included in the space devoted to this department. The Treasury Department also shows an interesting display from the offices of the bureau of engraving and printing.

The Smithsonian Institution occupies the centre of the south end of the building. It is particularly delightful to all lovers of birds and beasts. It seems as if one could find here every species of bird and animal, familiar or rare. Most of them are mounted in a way so natural as almost to deceive one, and there are many figures and groups of artistic character. There are also many displays accessory to those contained in the ethnological department, which is described elsewhere by Prof. Putnam. Life-size dummies of Indians of various tribes clothed in their peculiar costumes, and bearing pipes of curious and handsome design, are an attractive feature. The most interesting are those of the Navajos, wrapped in their hand-woven blankets, the most artistic and durable fabrics woven by any savage race. Some of these are held at great price, and they are at all times difficult to obtain.

We must not forget the space devoted to the signal bureau, which was mentioned but not described in the account of the War Department exhibits. It is one of the most entertaining of all in

the building. There is a panoramic scene which represents a notable event in the history of exploration. It reproduces faithfully to detail the return of the explorers who have reached the most northerly point ever attained by man. Figures representing Lockwood and Brainerd are shown, dressed in their heavy Arctic garments, meeting and being welcomed by Lieutenant Greely in the midst of a great ice field. The latter has outstripped the body of his party who are at a little distance. At the side of Lockwood and Brainerd is the dog sledge which bore their supplies on their marvelous trip, and harnessed to it a team of half a dozen canine companions. Some are lying on the snow resting, and others are standing in their traces patiently waiting the word to continue the



SIGNAL SERVICE, LIFE-SAVING STATION, AND LIGHT-HOUSE EXHIBIT.

journey, and taking little interest in the welcome which is being extended to their masters, or in the achievement which they have assisted in making. The scene is so perfectly constructed that no one can fail to be impressed by it, and to receive a better idea than ever before of the exact circumstances and conditions surrounding Arctic exploration.

The United States life-saving station is located northeast of the Government Building. It is a cottage of russet hue, with hip roof and gables, surmounted by a lookout tower and a deck structure. It covers a site 35 by 70 feet, and is one and a half stories high. The interior is fitted up for living purposes, the lower floor having a spacious dining-room, kitchen, pantry, closet, and keeper's-room,

beside an entrance hall. The second floor, which is reached by a wide stairway, contains sleeping apartments, including accommodations for the crew of eight persons. The station is in charge of Lieutenant McLellan, of the United States Revenue Marine, and is manned with the usual complement of men, surf-boats, apparatus, etc. During the period of the World's Fair, public exhibitions of boat drills, including the use of a life-saving apparatus, are given for the benefit of visitors. Boats of various kinds are connected with the station, including the English life-boat and surf-boat, and other apparatus, such as guns for firing life-lines, life-preservers, etc. On the ground floor, at the west end of the building, which opens out on the broad lagoon, is a large boat-house connected with a broad launchway 120 feet in length. In the boat room, before going to the rescue, or for drill, the surfmen are attired in oil-skin coats. The boats are easily launched by means of a steel track leading into the water. The cost of the building was about $10,000, which did not include the boats and apparatus. It has been decided to keep the station permanent, and continue it for life-saving after the close of the Fair. A regular patrol system of the entire beach is kept up day and night. The life-boat used in this station is made of mahogany, oak and ash. It is thirty-four feet long, eight feet wide and three feet six inches deep. The boat weighs four tons, and contains nine air-tight compartments. If upset, it rights itself and expels all water in twenty-five seconds.

The light-house at the Fair, which is near the life-saving station, is of modern pattern, built of steel, one hundred feet high, and braced with guy rods in every direction. Four men care for it during the Exposition, after which it is to be taken down and sent to the mouth of the Columbia river on the Pacific coast to warn mariners who approach that dangerous bar. It is a revolving light of the first magnitude, showing red and white, with the most powerful reflectors made.

The weather bureau is located near the life-saving station in a building of its own. The regular observations incident to a weather station are here made twice a day. A weather map is prepared and printed, and short lectures on meteorological subjects

are given every day. Among other interesting exhibits here is the flag brought back by Lieutenant Peary from his Greenland trip, with a record of all his observations there. The bureau also shows a complete set of meteorological instruments in operation, and the entire work of forecasting, from the receipt of telegrams to the publication and distribution of weather maps, is carried on in the presence of any one who may care to study the methods of the bureau.

East of the Government Building stands the United States Naval Observatory. It consists of three small buildings, which house respectively an equatorial telescope, a transit telescope, and a heliostat. The latter is an apparatus for observing the face of the sun, reflected upon a mirror in a dark room. In the same house Prof. Wm. F. Gardiner shows his time system regulated by astronomical clocks, and illustrates the manner of sending the standard time from Washington all over the Union. Daily at noon, a time ball is dropped from the top to the bottom of a post placed on the dome of the Government Building.

The reader will thus see that the exhibit of the United States Government, upon which has been expended a total of nearly $1,500,000, includes everything in the range of our governmental processes, and that the student of our system of political economy can learn very much therefrom. The managers of the exhibit are veterans in Exposition work, and to that extent possess an advantage over many who were preparing displays for the World's Fair. However that may be, all credit is due to them for the magnificent showing made by the United States Government at the Columbian Exposition.

LA RABIDA CONVENT RELICS OF COLUMBUS AND QUEEN ISABELLA

ANOTHER of the special features of the Department of Ethnology, which is considered of sufficient interest and importance to be entitled to a building of its own, is the magnificent collection of relics of Christopher Columbus, the great discoverer. The building in which this collection is housed stands in a spot somewhat isolated from the other buildings of the Exposition. Just south of the Casino, and the long pier, there is an inlet from Lake Michigan to the South pond, a body of water which extends almost to the southern extremity of the grounds, and forming a peninsula just opposite the Agricultural Building. At the northern head of this peninsula, and therefore almost surrounded by water, is the structure. It is an exact reproduction of the convent of La Rabida, the harbor of refuge and rest opened to the discoverer, when well nigh discouraged he was willing to retreat from the fight with fortune, and lay aside the hope of his life. At the convent he was welcomed, his plans were admired, he was encouraged, and here the good friars cared for his son when the famous voyage was at length begun. In fact it was largely by the influence of the good Franciscan priest, Father De Marchena, once the confessor of Queen Isabella herself, that the powers were

induced to equip the expedition, and start Columbus on the voyage that opened to civilization the whole western hemisphere. Who then can fail to see the justice in thus commemorating the good fathers at the same time that we remember Columbus, by thus reproducing their home, as the fitting place for the relics of the discoverer? In its present location is assured safety from fire, for it is entirely removed from the danger that might be from close connection with any other of the structures of the Fair.

Its isolation is just as complete from the manner and looks of the other buildings of the Fair as it is from their location. The contrast is indeed a startling one. On every hand rise the walls of the white palaces, showing in their magnificent façades the perfection of architectural art from every land possessing classical merit, Grecian, Roman, French and Spanish and Italian renaissance, Doric, Ionic, Egyptian and all that may be named, while here stands an example of the most simple and homely kind of the builder's craft. The quaint walls and roof, and the general ensemble, which is that of the middle ages, give the visitor a correct idea of the religious architecture of old Spain at the time of Columbus. On this account also it is of superior interest.

The interior of the structure is very different from that of any of the great neighbors of the convent. Its passages are narrow and even dark, its windows are small, its walls bare, and its ceilings low. As one passes through some of the old-fashioned doors, it is even necessary to stoop. But the contents. It is here that the greatest interest lies. No other building of the Fair contains such a noble collection of relics and documents of value and interest to any student of the past. Every quarter of the globe has been searched to secure the best collection possible of objects in the nature of relics of Columbus, of Ferdinand and Isabella, of the convent itself in those days four hundred years ago, and of everything that could be conceived of the same sort. Here one stands and gazes in awe at things hallowed by age and importance, and even the most irreverent of persons is impressed as he lingers within these walls. The building is constructed like the others of the Exposition, except as to its finishings. The roof is of old-fashioned

tiling, the floors of cement and brick, and the walls of plaster. Even the effect of age has been imitated, and the result is astonishing to one who is told that the building is but a product of the last year's work. Guards are ever present to protect the valuable treasures from the touch of any vandal hand, and the fire protection is that of unceasing vigilance, for no risk must be taken with these rarities, which no money can duplicate, and each of which is unique.

It will be interesting here to glance at the more notable of the things thus treasured, though it will be impossible to describe more than a few of them.

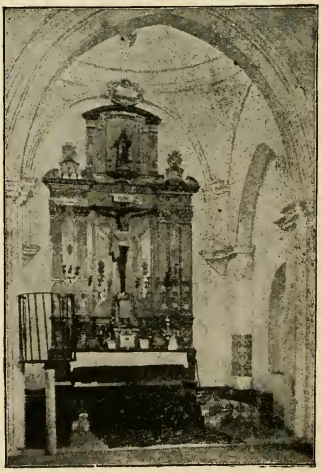
This reproduction of the Convent of Santa Maria de La Rabida (St. Mary of the Frontier) cost the Exposition Company $50,000, but the treasures which it contains are priceless. The idea of

CONVENT OF LA RABIDA.

constructing this edifice, and of collecting in it the relics of Columbus, was the thought of William Eleroy Curtis, of the Bureau of American Republics, who traversed the whole of Europe searching for traces of the great Genoese Admiral, and procuring relics, maps, etc., for exhibition here. He is probably the best authority on this continent concerning everything connected with Columbus. Mr. Curtis has written entertainingly of the Convent and its site. He tells us that it is located a few miles north of Cadiz, on the Atlantic coast of Spain, about half way between the Straits of Gibraltar and the boundary of Portugal, on the summit of a low headland between

the Tinto and Odiel rivers. These meet at its base, three miles from the sea. Tradition says that the convent was built in the reign of the emperor Trajan in the second century, while history records that it was reconstructed and used for a fortress during the Moorish occupation of Spain in the eleventh century. It passed into the possession of the Franciscan monks when the Mohammedans were driven from Andalusia. The little village of Palos de Moguer is three miles above the convent on the Tinto. A bar across the mouth of the river forbids the approach of vessels, and the place has declined from a flourishing commercial city to a lonely hamlet, forsaken by every one except farmers and fishermen. At this port, where the water is so low that sea grasses and rushes are growing where fleets used to float, was organized and equipped the expedition that discovered the new world. The ruins of the house of the Pinzons, who furnished one of the vessels and commanded two, are still shown, and the descendants of the family are yet the leading citizens of the region. A Moorish mosque, which was converted into a church, is still standing just outside the village on a hill. From its pulpit, in May, 1492, the Alcalde read the proclamation of the sovereigns, commanding the people of Palos to furnish two ships for the use of Columbus. Above the altar is the image of St. George and the dragon, as it was then, and on the

LOWER CLOISTER OF LA RABIDA.



ALTAR OF THE CHAPEL.

records of the parish are the names of the sailors who accompanied him and received communion the morning of their departure. There is also the miracle-working image of the virgin of La Rabida to which they offered vows.

ISABELLA IN ARMOR.

Authorities differ as to the time when Columbus first appeared at Palos and the Monastery of La Rabida. Some assert that he came there direct from Portugal in 1484. At this time he was on his way to Moguer, where he intended to leave little Diego, then nine years old, with his wife's relatives, and obtain from them means to pay his way to the court of Ferdinand and Isabella to submit his plans for a voyage across the western ocean to the strange lands described by Marco Polo. Others insist that he did not visit Palos until two years later, after his propositions had been rejected by the sovereigns and he was leaving Spain for Genoa or Venice.

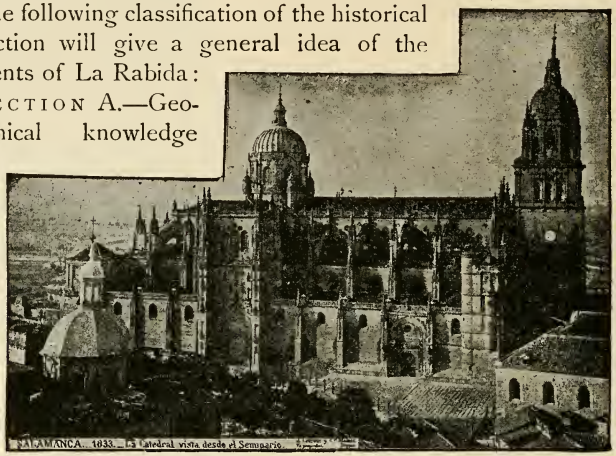
HOUSE OCCUPIED BY COLUMBUS AT FUNCHAL.

At any rate it is certain that Columbus approached the monastery one evening, weary, hungry and penniless, and asked for food and water for himself and his little boy. The hospitable prior gave him shelter and refreshments, and soon became interested in his plans and theories. From that time La Rabida was his asylum until he started on his memorable voyage. Here, too, he received his welcome upon his return from the newly discovered world. Thus it was decided, very properly, by the

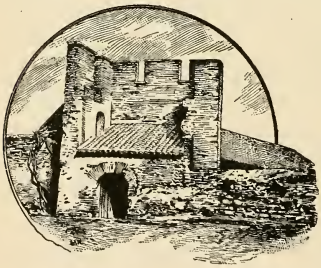
Exposition authorities, that no more appropriate building could be erected for the shelter of the historical collection and the relics of Columbus than a fac-simile reproduction of this ancient and picturesque monastery.

The following classification of the historical collection will give a general idea of the contents of La Rabida:

SECTION A.—Geographical knowledge and the science of navigation at the time of Columbus. 1. Maps, charts and globes anterior to Columbus. 2. Nautical and astronomical instruments. 3. Models of vessels. 4. Evidence of pre-Columbian discoveries. 5. Arms, armor, equipments, etc., of the time. 6. Books known to Columbus, and portraits of their authors.



CATHEDRAL AT SALAMANCA.



LA CASA DEL CAMPO.

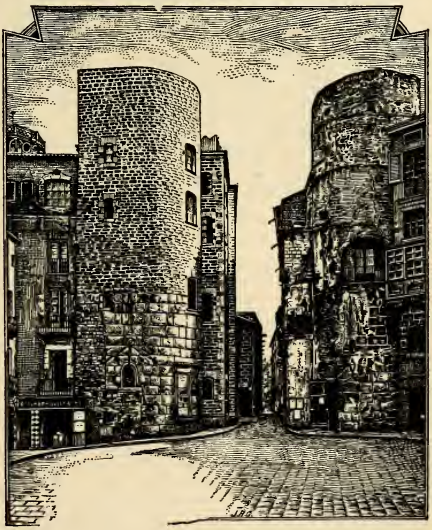
SECTION B.—The court of Ferdinand and Isabella. 1. Portraits, autographs, and relics of the sovereigns; pictures of scenes identified with their lives, their tombs, and monuments. 2. Portraits and relics of persons identified with the career of Columbus at court, or associated with the discovery.

SECTION C.—Youth and early life of Columbus. 1. Views of places associated with his birth and boyhood. 2. Scenes identified with his career in Portugal and the Madeira Islands.

BAY NEAR WHERE COLUMBUS LANDED.

SECTION D.—The career of Columbus at the court of Spain. 1. Scenes and places at Cordova, Granada, Salamanca, Seville, and other cities identified with Columbus. 2. The Monastery of Santa Maria de la Rabida; illustrations of the life of Columbus there.

SECTION E.—The first voyage of Columbus. 1. Models and pictures of the caravels. 2. Fac-similes of charts, nautical instruments, books, etc., used on the voyage, and model showing the course of the voyage. 3. The discovery and landing at Watling's Island. 4. Views and relics of Watling's Island and other places visited on the voyage. 5. The construction of the fort at La Navidad. Views and relics of the place. 6. Views of Lisbon and other places visited on the voyage homeward. 7. Reception of Columbus on his return



TOWERS WHERE COLUMBUS LODGED, BARCELONA.

to Spain ; views of Barcelona. The scene of the egg. 8. Strange things seen on the voyage. Fac-similes of relics brought home.

SECTION F.—The second voyage of Columbus. 1. Views of Cadiz, from whence he sailed. 2. Views of the islands discovered on the second voyage, and evidence of cannibalism illustrated by old prints. 3. Remains, views and relics of Isabella, the first settlement in the new world. 4. Explorations of the mountains of Cibao; El Puerto de los Hidalgos; views of La Vega and Santo Cerro; the cross of Columbus; Santo Thomas. 5. The discovery of Jamaica; Santa Gloria and St. Ann's Bay; illustrations of

ISABELLA OFFERING HER JEWELS.

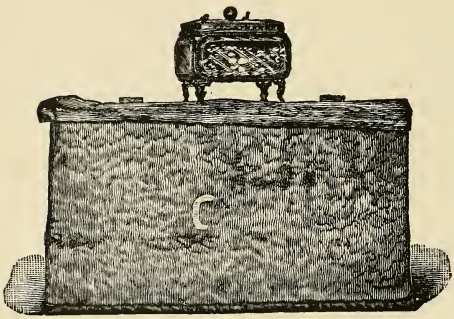
associations with the natives. 6. The return to Santo Domingo; adventures with the Indians; "eat gold, Christian, eat gold;" founding of the city of Santiago. 7. Queen Anacona, and the founding of the city of Santo Domingo; scenes in that city. 8. Return of Columbus and scenes at Burgos when he was received by the sovereigns.

SECTION G.—The third voyage of Columbus. 1. Views of Trinidad and other places visited by Columbus. 2. The mutiny at Santo Domingo. 3. The arrest and imprisonment of Columbus; the castle in which he was confined; the admiral in chains. 4. Reception by the sovereigns on his return to Spain; scenes at Seville and Segovia.

COLUMBUS AS A BOY. (479)

SECTION H.—The fourth voyage of Columbus. 1. Scenes in Honduras and other places. 2. Wreck at St. Christopher's Cove; mutiny at Porras; views of the place. 3. Return of Columbus.

SECTION I.—The last days of Columbus. 1. His home at Seville. 2. The death and burial; his will; the house in which he died. 3. Removal of his remains; the cathedral at Santo Domingo; the cathedral at Havana. 4. Monuments erected to his memory. 5. The portraits of Columbus. 6. Portraits of his family and descendants (genealogy). 7. Relics of Columbus; autograph letters; the contract, commission, and instructions received by him from the sovereign of Spain; letters from Ferdinand and Isabella.



LEADEN CHEST AND CASKET CONTAINING COLUMBUS' DUST.

SECTION K.—The publication of the discovery. 1. Copies of the first books about America; maps, manuscripts, fac-similes, and illustrations. 2. Views of St. Die, and the persons identified with the christening of the continent. 3. Relics and portraits of Amerigo Vespucci and other explorers. 4. Growth of geographical knowledge during the century following the discovery, illustrated by fac-similes, books, maps, charts, etc.

SECTION L.—The christening of the continent, etc.

SECTION M.—The conquest of Mexico and Peru, and the settlement of other portions of America.

SECTION N.—Original papers relating to Columbus; loaned by the Duke of Veragua.

SECTION O.—Original papers relating to Columbus; loaned by the Duchess of Berwick and Alba.

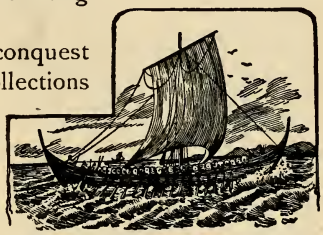
SECTION P.—The Vatican exhibit.

SECTION Q.—The John Boyd Thacher collection of valuable works relating to Columbus and the discovery.

The classification of the bibliography of Columbus is as follows :

SECTION A.—Archæological and ethnological collections showing the condition of the natives. 1. Models of habitations ; implements, utensils, and other illustrations of life and customs. 2. Portraits and pictures, costumes, canoes, weapons, etc.

SECTION B.—The conquest of Mexico. 1. Illustrations of the condition of the Aztecs. 2. Arms, armor, etc., of the conquistadores, showing how the natives were overcome. 3. Portraits, pictures, and relics of Cortez and those who were associated with him. 4. Maps, charts, and printed volumes illustrating the conquest.



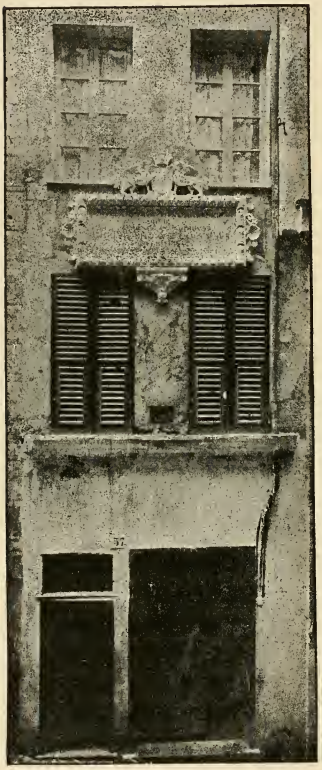
A NORSE SHIP.

SECTION C.—The discovery and conquest of other portions of America. 1. Collections showing the condition of the natives in other parts of the continent. 2. Portraits and relics of other discoverers and early voyagers. 3. Maps, charts, and printed volumes, showing the progress of civilization and the growth of geographical knowledge. The specimens included in this collection, in the historical portion, omitting the bibliography of the period of the conquest, number more than one thousand, and of course only the more important can be named. The first one is the model of a Norse ship, such as Leif Erikson is supposed to have used in his voyage to America. Adjoining it are charts and books concerning Erikson's discovery, and fac-similes of relics that are supposed to belong to that period.

MARCO POLO.

There is a fac-simile of the Zeno chart. About 1319 a Venetian navigator named Nicolo Zeno started from Venice, passing Gibraltar and sailing northward. After various adventures he went as far as Greenland, and on his return prepared a chart of the lands visited and an account of the adventures. There are portraits of Marco Polo, of Claudias Ptolemy, the Latin geographer, and other noted early explorers. The earliest globe of im-

portance was made in 1492 by Martin Beahaim. A fac-simile of it is shown here. There are curious maps, and charts of various portions of the world as they were known before the voyage of Columbus; a chart showing the world as it is, and as Columbus thought it to be; and a map of the United States, showing the number and location of places named in honor of Columbus.



HOUSE IN GENOA, IN WHICH COLUMBUS IS SAID TO HAVE BEEN BORN.

FERDINAND AS A BOY.

In the section relating to the court of Ferdinand and Isabella there are numerous portraits of both of these taken at various times of their life. The original will of Queen Isabella is exhibited, which was made at Medina del Campo, November 23, 1504. It was loaned by the government of Spain at the request of the President of the United States.

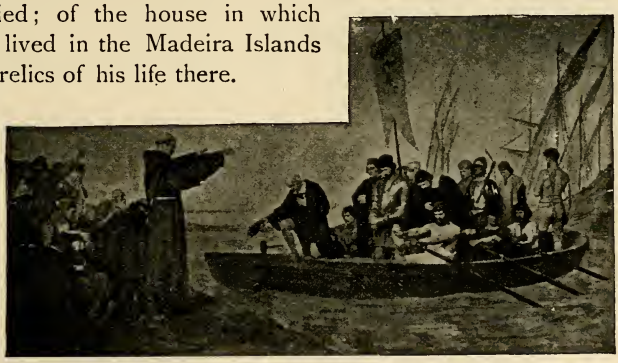
ISABELLA AS A CHILD.

The will is in the handwriting of the Queen's private secretary, Gasper de Gricio, and consists of four sheets of vellum. In one of the clauses of the will Isabella recommends the protection of the persons and property of the Indians in the new world.

The section devoted to the youth of Columbus begins with a beautiful view of the harbor and city of Genoa. There are also shown pictures of the street and the house in which Columbus is

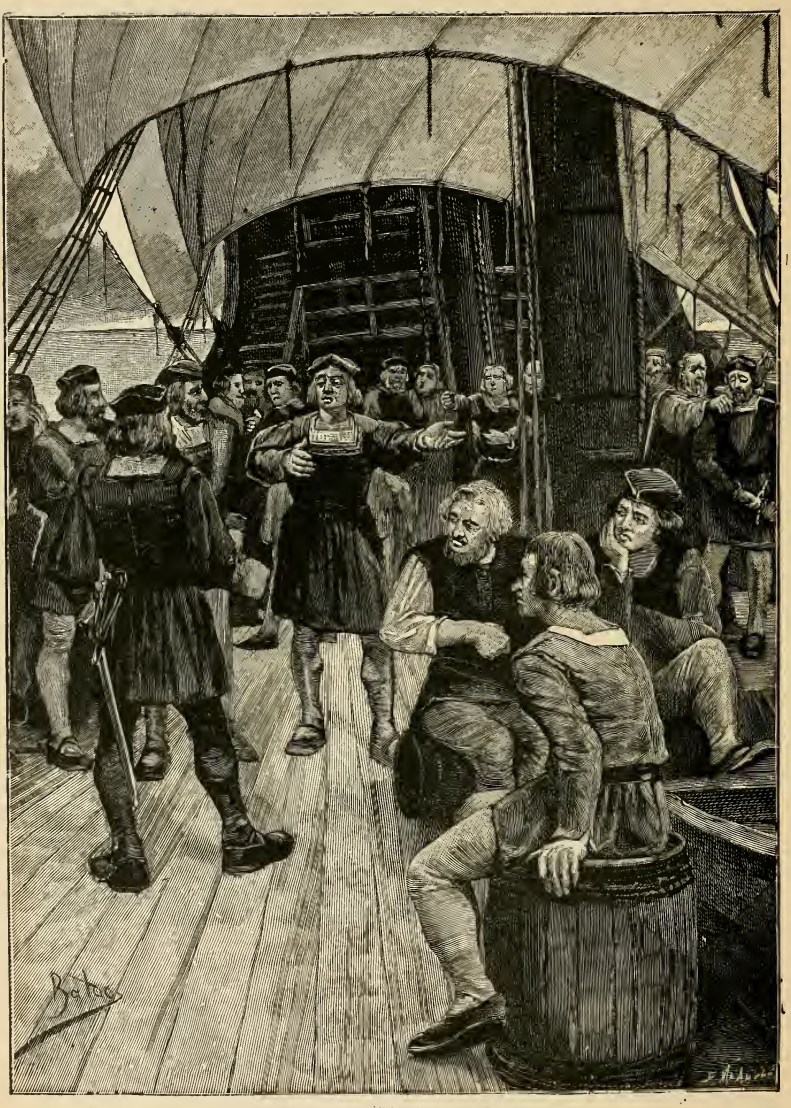
MONASTERY OF LA RABIDA AS IT APPEARED IN 1890, BEFORE ITS RESTORATION TO ITS CONDITION AT THE TIME OF COLUMBUS.

said to have been born. Other cities which dispute the honor of Columbus' birth-place also show views. There are pictures of the University and city of Pavia, where it is said that Columbus attended school; of the church at Lisbon in which Columbus was married; of the house in which Columbus lived in the Madeira Islands and other relics of his life there.



FATHER PEREZ BIDDING FAREWELL TO COLUMBUS.

The career of Columbus in Spain is illustrated by views of Huelva, of La Rabida, portraits of the prior of the monastery, interior views in the cloisters, and the chapel; views of Cordova, and of many scenes in the life of Columbus at this period. Some of these are fine paintings of considerable note. A picture of the once flourishing city of Palos is



COLUMBUS QUELLING THE MUTINY.

shown, the port at which the expedition was organized. From the docks here Columbus set sail on the 3d of August, 1492. In May, 1528, Cortez landed at Palos, after the conquest of Mexico, and by a strange coincidence met there Francisco Pizarro, who was just starting upon his career of bloodshed and devastation in Peru. The town of Palos was selected as a place of departure for Columbus because its inhabitants, on account of a disturbance that had taken place among them during the war with the Moors, had been condemned to keep, at their own expense, two caravels with crews and

RECEPTION OF COLUMBUS BY QUEEN ISABELLA.

arms, at the service of the state for one year, and ready for sea on receipt of orders.

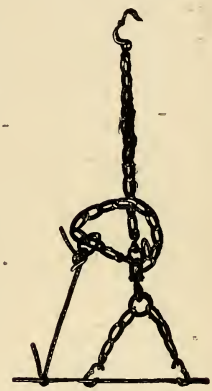
The scenes associated with the first voyage of Columbus are numerous and of particular interest. Many paintings are here included. There are pictures of the caravels; of Father Perez bidding farewell to Columbus; of Columbus on the deck of his ship, and of the mutiny when the sailors demanded a return to Spain. There are charts, and maps, and views of all the disputed islands which claim the honor of being the first discovered land, although Watling Island has by all means the weight of evidence. There are scenes on San Salvador, Cuba, Santo Domingo, Hayti and

other places visited on the first voyage. There are also paintings showing the reception of Columbus at court when he first appeared before Isabella and Ferdinand. One of the strangest pictures is from an old engraving in "Philopono's Voyage to the New World of the Western Indies." The sailors reported that they had seen in the waters of the New World fishes so large that a caravel could be floated on their backs, and an altar could be erected and mass said upon them. The story was retold with variations, and finally the veracious priest, Philopono, related the tale as an actual fact, and gave illustrations of how the caravels had been carried about by whales and mass celebrated upon their backs.

The scenes associated with the second voyage of Columbus include pictures of his departure from Cadiz; his arrival in the new world; the present appearance of the ruins of Isabella, Santo Domingo, the first civilized settlement in the New World, and relics from these ruins. In 1891 Mr. F. A. Zober, the Columbian commissioner to the West Indies, spent a week at the site of Isabella. All the cut stone that remained was brought away and shipped to Chicago, and is now exhibited here. The stones were taken from the last remnants of the old church, the mint, and the public warehouse which was known as the "King's House." The site is all overgrown with semi-tropical vegetation and now shows little signs of its early importance. The first church bell that rang in the New World is here. It is of bronze, about eight inches in height and six inches and a half in diameter. It was presented to the church at Isabella by King Ferdinand, and is considered one of the most precious relics of the early times of Santo Domingo.

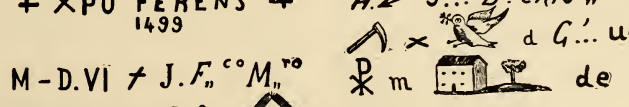
The scenes associated with the third voyage of Columbus are fully illustrated with interesting paintings and relics. There is a view of Boca del Drago, Trinidad, where Columbus entered to reach the South American continent for the first time. On the 4th of August, 1498, Columbus anchored off the southwestern extremity of the island of Trinidad. Late at night he saw a wall of water approaching the fleet from the south. His own vessels were lifted up so high by the incoming waves that he was in great danger, while the cable of one of the other ships parted under the strain to

which it was subjected, carrying away the anchor by which the vessel was held. Many years ago, while some laborers were digging a deep trench upon a cocoanut estate near Icaques, where this accident occurred, about 350 feet from the sea, they found an anchor of antiquated pattern. The land on this part of the island has been encroaching upon the sea for many years, and it is believed that the spot where the anchor was found was covered by water at the time of Columbus. This anchor is exhibited here.



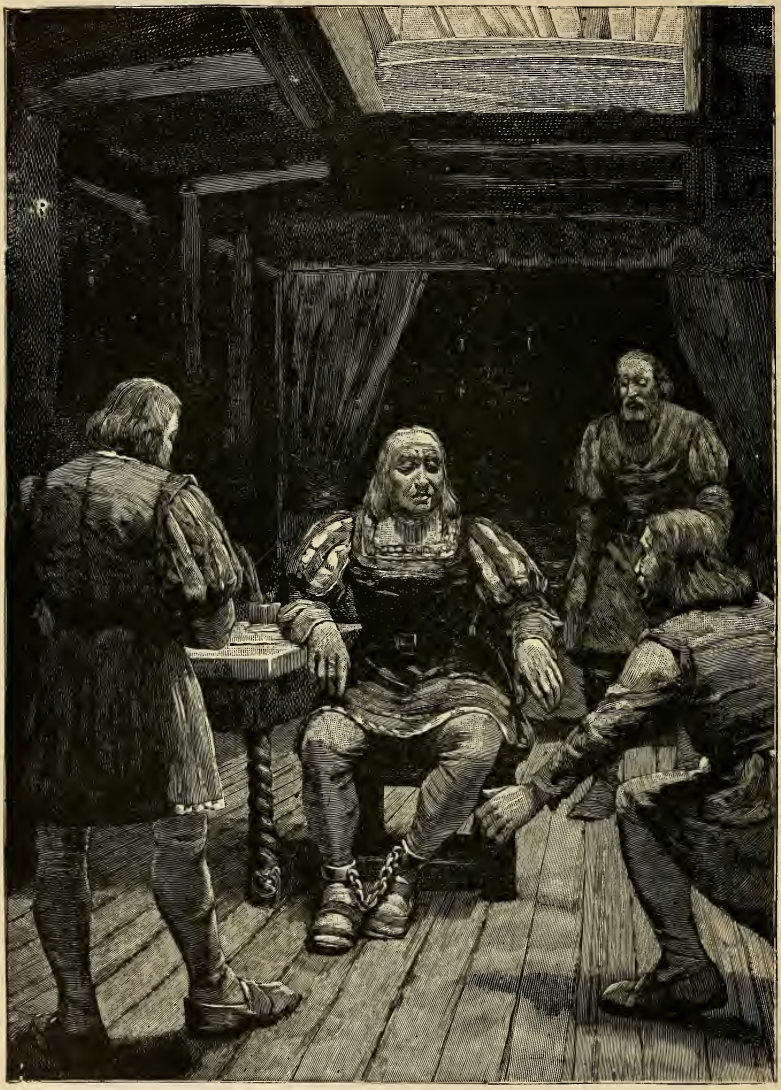
CHAINS OF COLUMBUS.

The original letter is exhibited which Francisco Roldan wrote in 1502 complaining against the administration of Columbus. It was this letter which caused the King and Queen to send Bobadilla to investigate the affair. He arrested Columbus and put him in chains. The citadel at Santo Domingo in which Columbus was imprisoned is shown; and various paintings, showing Columbus in chains, and photographs of chains which are claimed to be the same placed upon Columbus by Bobadilla. They are now owned by Cavalier G. Baldi. The enlarged fac-similes of the inscriptions upon the chains are very interesting. The chains weigh seven pounds and eight ounces, and are divided into four parts: First, a large chain to be fastened to the ankle, with an extension to encircle the waist, six feet three inches in length. Second, a small



INSCRIPTIONS ON CHAINS OF COLUMBUS.

chain with handcuffs, two feet and one inch in length. Third, two other links connected together, five and one-half inches long; and



COLUMBUS REFUSES TO HAVE HIS CHAINS REMOVED EXCEPT BY ORDER OF THE KING.

fourth, the lock. On the fetters and handcuffs are inscriptions of

COLUMBUS RELATING HIS ADVENTURES TO ISABELLA.

abbreviated words and interpolated signs characteristic of the times, which are interpreted by the owner as follows: "The arrow of calumny gave three shackles to Don Christopher Columbus, the dove that carried the tidings of Christianity to the New World, who died at my house, Aposento, Valladolid, May 1506, in the peace of Christ. Francisco M-ro (name of inn-keeper) had this engraved as a pledge of jealous and eternal remembrance. Christ Bearer, 1499."

WHERE COLUMBUS WAS WRECKED.

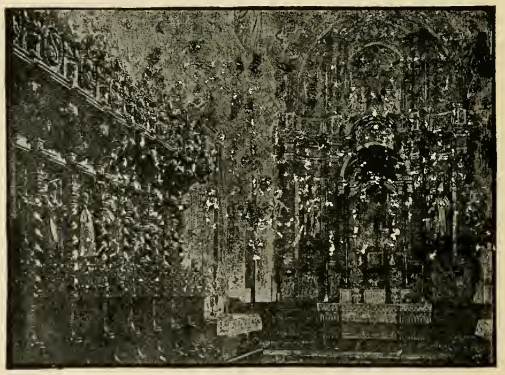
A picture by the noted Spanish artist, Jover, represents Columbus

relating his adventures to Isabella. It is a fine work and worthy of the attention it attracts.

A large collection of paintings and other pictures commemorate the scenes associated with the fourth and last voyage of Columbus. There are scenes in Santo Domingo, Truxillo and other portions of Honduras, the Isthmus of Panama, and Christopher's Cove, St. Ann's Bay, on the Island of Jamaica where Columbus was wrecked. There is also a large collection of early pictures of America from De Bry's voyages.

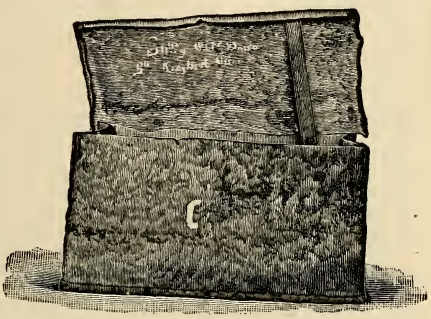
HOUSE WHERE COLUMBUS DIED.

The section devoted to the last days of Columbus has paintings and engravings showing the city of Seville, and the convent of Cartuja. Several paintings are shown representing the death of Columbus, the house in which he died, the chapel of the convent at Cartuja in which Columbus was buried, and of his tomb. There is also a picture of the interior of the cathedral at Santo Domingo showing the location of the high altar and the Columbus burial vault.



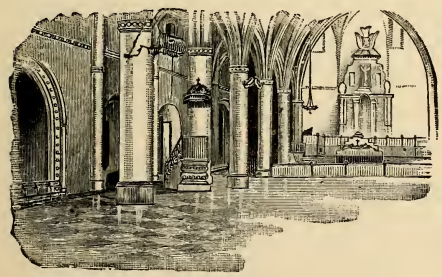
CHAPEL OF THE CONVENT OF CARTUJA.

There are shown the steps to the presbytery and tomb of Columbus, and a fac-simile of the box in which the remains were found. In this section are portraits of Columbus' brothers, his sons, and other members of his family; the genealogy of the Columbus family to the present day, and portraits of the Duke of Veragua, and other members of the family. The section devoted to the relics of Columbus is a voluminous one. There are many autographs, some of them mere signatures, and others complete letters and documents of historical value.



FAC-SIMILE OF THE BOX IN WHICH THE REMAINS OF COLUMBUS WERE FOUND.

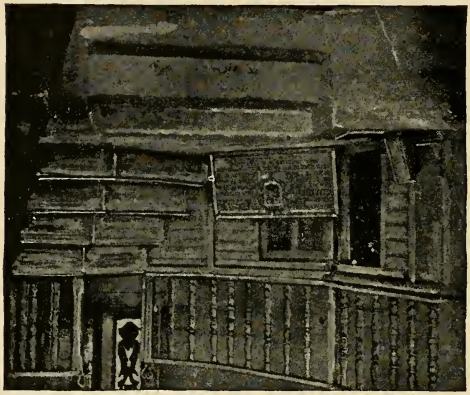
The section devoted to the publication of the discovery contains a fac-simile of the title page of the first book published about America, which was a little quarto of four leaves reproducing his letter to Sanchez. There are also copies of the second, third, fourth, fifth and sixth editions of the letter of Columbus, his letter to Sant-angel in various editions and fac-similes; and other early descriptions of the discovery.



INTERIOR OF SANTO DOMINGO CATHEDRAL.

The section devoted to the christening of the continent includes portraits of Americus Vespucius, and volumes and documents relating to the name. Beside all that we have named there are a host of valuable relics, documents and maps illustrating the discoveries and explorations of other parts of America and of later years than those of Colum-

bus, but of all none attract more attention than the original papers pertaining to Columbus, loaned by the Duke of Veragua, the Duchess of Berwick and Alba; by His Holiness, Pope Leo, and by John Boyd Thacher of New York. Among the first of these is the original commission given to Columbus by Ferdinand and Isabella upon his departure for the first voyage. It is dated at Grenada, April 30, 1492, and appoints Columbus grand admiral of the ocean seas, and vice king and governor-general of all the lands that he should discover. Of the same date there are royal letters patent from the sovereigns of Spain exempting from taxation all supplies needed for the fleet; commanding the inhabitants of Palos to furnish Columbus with everything necessary to equip the caravels; commanding the inhabitants of Palos to furnish Columbus with two caravels; and granting security against arrest or detention for any offence to all persons accompanying Columbus on the voyage. There are other commissions and royal letters patent from the sovereigns to Columbus concerning other voyages.



TOMB OF COLUMBUS AND STEPS TO THE PRESBYTERY.

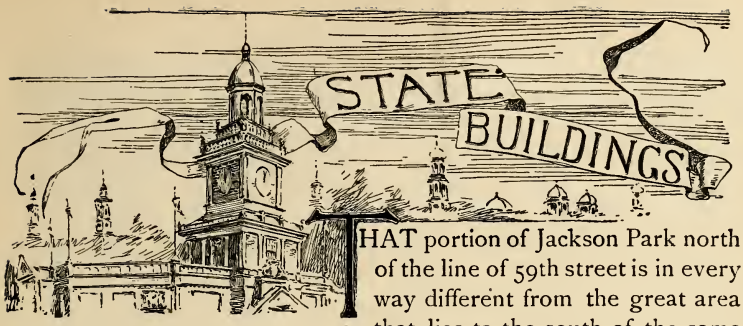
The original will of Columbus is shown and is of particularly notable interest. There are numerous letters from Columbus to the sovereigns of Spain, to the Pope of Rome, to his son, Diego, and to Father Cuevas. All of these are original papers and they are the most priceless and remarkable documents in existence.

One may profitably spend many days in the marvellous collection without exhausting its interest, and every day is certain to increase

the impression of reverence and admiration for the great work of discovery begun by Christopher Columbus.

In the south pond of the Exposition grounds are moored the reproductions of the three Spanish caravels which bore the crew of Columbus on his first voyage. In a plan for a historical exhibit at the Exposition which was prepared by Mr. Curtis, it was proposed to reproduce in fac-simile the fleet of Columbus and anchor them off the shore at Jackson Park during the Exposition in such a manner as to place them in contrast with the model battle-ship which represents the naval architecture of this century. The Spanish government co-operated in this effort, and after months of study plans were prepared by a board of naval architects and archæologists appointed by the Spanish Minister of Marine for the reproduction of the Santa Maria, which was the flagship of Columbus, and the Pinta, and the Nina, which composed his fleet. The caravels were constructed at Barcelona and Cadiz. The flagship was built at the expense of the Spanish government, and the other two at the expense of the United States. The ships made their first public appearance at Huelva, Spain, on the 12th of October, 1892, and were then visited by the Queen and royal family, and by thousands of visitors. On the 19th of February the vessels started for America, following as near as possible the course of Columbus. They were delivered to the Spanish authorities at Havana about the middle of March, and were manned and used by them during the naval review at Hampton Roads and New York. They were then towed to Chicago and anchored off the Exposition grounds, where they attract great attention. After the Fair they are to be presented by the Spanish government to the United States and will remain permanently in this country.

ILLINOIS STATE BUILDING.



THAT portion of Jackson Park north of the line of 59th street is in every way different from the great area that lies to the south of the same line. It comprises what was known as the improved portion of the park long before any effort had been made to transform the square mile of sand-hills to the south into the City of White. Here in this improved portion of forest trees and green sward were assigned the locations for the State Buildings and the buildings of foreign countries represented at the Exposition. Within the same space is included the Art Gallery, but with that single exception it is devoted to the purposes named. The entrance to this portion of the park for thousands of visitors is the gate at 57th street. Once within this gate a magnificent vista greets the eye of the visitor. He looks down the magnificent avenue directly east toward Lake Michigan, and upon either hand are the beautiful houses established for headquarters by the various commonwealths which form the American Union. The first to the left is Nebraska, and in front of it passes a curved promenade which circles to the north, and forms another grand avenue, upon which face others of the State club-houses. Passing along this curved avenue through one-fourth the arc of a circle, one sees on the left, after Nebraska, North Dakota, Kansas and Texas. On the right of the same avenue come in succession Minnesota, Arkansas and Kentucky. At this point a north and south avenue intersects with the curved one which the visitor has been following. Passing southward upon this, on the right, are the States of Florida and Missouri, and on the left West Virginia, Arizona, New Mexico, Oklahoma and Pennsylvania. We have now almost completed the circuit, and between the States of Minnesota and Missouri, facing again on the

east and west avenues, we find Louisiana. Continuing east at the point where we turned south the last time, on the left we find Utah, Montana, Idaho, Virginia and Iowa, while on the right are Maryland, New Jersey, Connecticut, New Hampshire and Maine. By this time we have again reached the 57th street avenue, and returning westward along its course we find Vermont, Massachusetts and New York. Facing another north and south intersecting avenue, which opens between Massachusetts and New York, are Delaware and Rhode Island. This exhausts the list of State Buildings north of the magnificent avenue. On its south face the two Annexes and the main structure of the Art Galleries with the great open lawn which they include, but to the west of the galleries another grand avenue leading south conducts us to a view of the remaining State Buildings. These in turn upon the right are South Dakota, Washington, Colorado and California, and upon the left, Michigan, Ohio, Wisconsin, Indiana and Illinois. The latter is entitled to rank in size with the great buildings of the Exposition, and it is equally magnificent, but its purposes are the same as those of the other State Buildings, and consequently it should be classified with them. It is separated from the Art Galleries by the great North Pond, and faces the North Lagoon and the Wooded Island. These State buildings, which have been named and located so hastily, are of remarkable interest, a fact which is more apt to be recognized by foreign visitors than by our own Americans. They contain exhibits of the resources of the States, club-rooms and retiring-rooms for the people of the States, and rooms for public comfort. In almost every instance their architecture is characteristic of the State which they represent. It is unquestionably true that they will be the headquarters for places of meeting. Appointments will be made by visitors from every State in the Union to meet at a place such as this, where, by their personal interest in the structure and their acquaintance with the people in charge, they may feel entitled to use the headquarters at their own freedom. Some of them are large and some small, but without exception all are worthy representatives of the States which erected them. After this hasty glance at the location a somewhat more definite

EQUALITY BEFORE THE LAW

description of the more prominent of the State Buildings and of the exhibits which they contain should be of interest.

Not all of the States to which locations were assigned as already named took advantage of the assignment to erect buildings. In some instances, appropriations made by legislatures were too small, and in others it was thought wiser to expend the money in making better displays within the main buildings of the Fair. Alabama, Georgia, Mississippi, Nevada, North Carolina, Oregon, South Carolina, Tennessee, Wyoming and four of the Territories are those which erected no buildings.

The Nebraska Building, which is the first one to be reached as the visitor enters the Fifty-seventh street gate and turns to the left, is built in the colonial style of architecture. It measures 60x100 feet, and is covered with staff to represent stone. On each side of the building is a large portico, with eight massive columns running the full height of both floors, and supporting the gables over the porticos. Six large rooms open on to these, giving space for exhibits. On the first floor is found a large exhibit hall, reception, waiting, commission and men's toilet rooms. The second floor is reached by a magnificent staircase ten feet wide which is one of the features of the building. The janitor's and reading rooms are located on the second floor, as are also waiting, reception and toilet rooms for ladies. There are some interesting art exhibits in the building, as well as displays of the great agricultural resources of the State. It is amply equipped with stand pipes and other apparatus for checking fires. Henry Voss, of Omaha, is the architect of the building, and it was erected at a cost of $15,000. Designed as the general headquarters for Nebraska people and their friends, it is entirely satisfactory for the purpose intended.

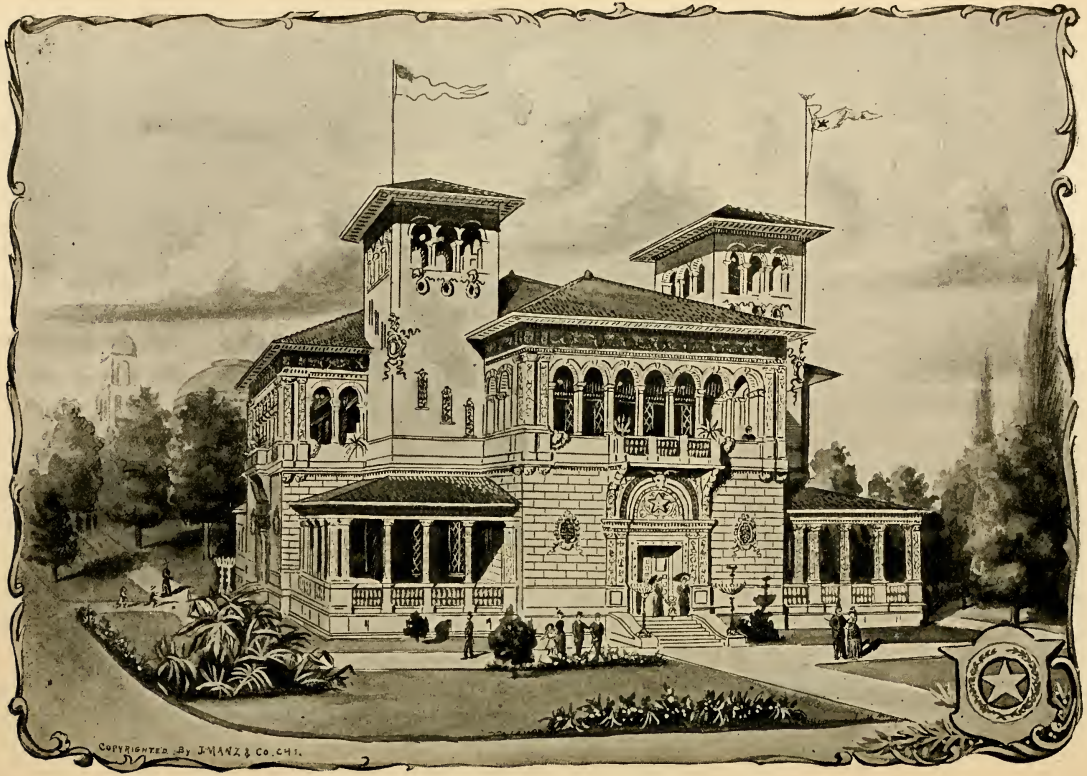
The North Dakota State Building is next on the left after one passes Nebraska. It is also in the colonial style of architecture, which seems to be particularly appropriate to the State buildings. It is dignified, though not severe; home-like and hospitable, yet not trivial. In the North Dakota edifice the solid structure of the front elevation is essentially classic, with large exterior colonnades or porches carried up to cover two stories, a feature which is useful,

KANSAS STATE BUILDING.

and which, at the same time, softens and makes attractive the severer lines of the classic ideal. The ground-floor colonnade forms the porch, and the second story a gallery, doubly attractive by the fine situation of the building. The interior offers generous stairways and hall space, lighting and ventilation. The whole first floor is thrown into one room, 60 by 90 feet, affording ample room for display of the State exhibits, which include nearly every product of the soil found in the temperate zone, whether from field or forest,

INTERIOR OF KANSAS STATE BUILDING.

farm, garden or orchard. A feature of this room is a large fireplace facing its main entrance, flanked on either side by stairways which meet at a landing, and, merging into one, give access to the second floor where are found reception, press and committee rooms, and toilet accommodation. The decorations of the building, both exterior and interior, are conventionalized representations of the natural and agricultural products of North Dakota. Wheat, corn, grasses of many kinds, etc., are shown in bas-relief on bands, panels and angles, while pedestals are occupied by allegorical figures and groups appropriate to the time and place. The material used for



TEXAS STATE BUILDING.

the structure is wood, covered with staff. The cost of the building was $11,000.

The next State in order is Kansas. Its building is unique in every way, inside and out, and it never fails to attract great attention. The building is of a cruciform plan, and measures 135 feet from north to south and 140 feet from east to west. It was one of the first State Buildings to be completed, and the first to be dedicated. The women of Kansas stand out as shining examples of progress and independence. They were very largely the promoters of the Kansas Building, and the distinctive features to be seen here are exhibits made by organizations of women from that State, particularly in the line of educational institutions. The rear of the building was especially designed for the valuable natural history collection of the State University, which is one of the most notable exhibits of the Fair. On the same floor are offices for the Board of Commissioners; four flights of stairs lead to the second floor where are rooms for the woman's exhibit, and parlors for men and women. The bas-reliefs in front of the tower represent the State as she was when admitted into the Union in 1861, armed for her struggle, and again, under her present prosperous aspect, crowned with the wealth of endless resources. Seymour Davis, of Topeka, is the architect of the building, which is constructed entirely of Kansas material, and cost nearly $30,000.

The Texas State Building is next in order as one passes northeast along the circle. It was provided entirely by the women of that State. It is constructed after the style of the old Spanish Mission, and is a good example of Spanish renaissance architecture. It was designed by J. Riley Gordon, of San Antonio. The building contains assembly rooms, 56 feet square and 20 feet high, provided with a large art glass skylight in the ceiling, with a Mosaic Texas star in its centre. The rostrum, ante-rooms, etc., are finished in the natural woods of Texas. The administration wing contains a register, a bureau of information, and rooms for offices and public comfort. There are also toilet rooms, rooms for county collective exhibits, a historical museum and a library. The main entrances are through vestibules, flanked on either side by

niches and colonnades. The main vestibule terminates in a large auditorium, from which entrance is afforded to the various working departments above mentioned. The building presents a Spanish vista, a bower of beautiful Texas foliage, comprising the banana, palm, magnolia, pomegranate, Spanish dagger, orange, lemon, and other tropical plants. Either corner is flanked by a square tower, the intervening curtains consisting of two stories of open arcaded loggias. The towers also have loggias in their top stories. Both the main building and the towers are covered with a low, pitched roof of brown-red Spanish tile. The building cost $40,000, and is one of the most attractive at the Fair.

UTAH BUILDING.

Crossing the gravel walk the visitor now reaches the Utah Building, a graceful structure at the extreme north of the Fair. It measures 50 by 90 feet, and cost nearly $20,000. The first floor contains an exhibition hall extending up through the second story, and forming a semi-circular light well and gallery at the intersection of the second floor. On the same floor are the secretary's apartment, bureau of information, ladies' reception room, toilet rooms, etc. The officers' quarters are above, and a large room for special exhibits. The building is used as a headquarters for Utah people and a bureau of information, where people may get reliable statistics and data regarding Utah and her people. There are also some special exhibits of great interest, representative of the industries of the State. These include agricultural, manufactured and mine products, such as gold, silver and sulphur. With these latter are shown plans illustrating the methods of reducing sulphur and

the handling of borax and rock salt found in some parts of the territory, as clear as crystal. A miniature of Great Salt Lake is shown in front of the building. Dallas & Hedges, of Salt Lake City, are the architects.

Returning to our starting-point opposite the Nebraska Building, as we face north, we find on the right the building of Minnesota.

MINNESOTA STATE BUILDING.

Its ground area is 80 by 90 feet, and its height to the cornice line is forty-one feet. The frame is of wood, covered with staff, while the architecture is of the style of the Italian renaissance. On the front portico stands a very fine sculptural group symbolizing the Indian legends of Hiawatha and Minnehaha. It was executed by Jacob Fjielde, and contributed by the school children of Minnesota. This beautiful group is inspired by Longfellow's poem, and the design finds its motive in the lines—

> "Over wide and rushing rivers
> In his arms he bore the maiden."

After the close of the Fair the group is to be cast in bronze and placed in Minnehaha Park, at Minneapolis. The first floor is devoted chiefly to an exhibition hall, where is shown a fine collection of the birds and beasts of the State. Here are also specimens of her grain, minerals and other products. A drinking fountain of Mankato stone is in the centre of the hall, and on the left a relief map, 23 by 25 feet, of Duluth and its harbor. In the rear is the superintendent's room, with check rooms and post-office. In the mezzanine story are sleeping rooms for the officials and the employees. On the west side of the second story is the State Board

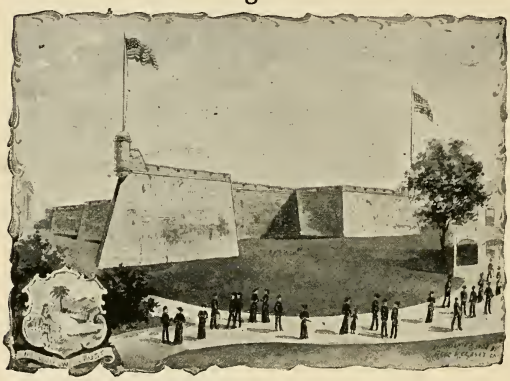
room, and on the east side the Woman's Auxiliary Board room, each being equipped with reception, reading and toilet rooms. Two guest chambers are in the rear. The interior is decorated in plain tints, with elaborate friezes, selected from designs by women artists of the State. William Channing Whitney was the architect of this building.

Just to the north is the special building erected by Arkansas, which is constructed in the French style of architecture. The building measures ninety-two feet deep by sixty-six feet wide. The main entrance is through an elaborate circular veranda, with granite steps leading up to it, which were cut at the Little Rock quarries. From this a triple arcade leads into the rotunda, which extends the entire height of the building, rising to a square dome thirty feet in diameter. One of the most interesting features of the building is a fountain which stands under the dome, and was donated by the ladies of Hot Springs. The basin is ten feet in diameter, and from a granite foundation in the centre of it rises the figure of a boy, holding over his head a passion flower, the emblem of the State. Hot Springs crystals are grouped around the base, while others cover the petals of the flower. Aquatic plants are placed at the corners of the basin. This feature was designed by Mrs. P. H. Ellsworth, of Hot Springs, and when illuminated by electric lights is very attractive. The three rooms, fifteen feet square, on either side of the rotunda, are used as ladies' reception and exhibit rooms, while the large one in the rear, 25 by 65 feet, extends the width of the building, and is devoted to general exhibits. Triple

ARKANSAS STATE BUILDING.

arches span it, and one of its handsomest decorations is a mantel twelve feet long, made of Arkansas white onyx. In the second story a broad gallery encircles the hall, affording entrance to six rooms, each fifteen feet square. The first floor of the building is laid in clear Arkansas pine, donated by the various lumber companies of the State. The architect of this building was Mrs. Frank Middleton Douglas. She was given the prize for the design over all competitors, and was also superintendent of construction of the building.

The Florida Building faces on a walk to the east, but also reaches out to the one where we are now touring. It is one of the most noteworthy of all within the grounds of the Fair, and was constructed almost entirely by private subscriptions, apart from legislative aid. It is distinctively southern in idea, characteristics and material. The design is unique, original and historic. It is an exact reproduction of old Ft. Marion, St. Augustine's remarkable Spanish Fort. The old fort has figured in the stirring events of three centuries. It was called by the Spaniards San Juan de Pinos, San Augustin, San Marco, and by the English St. Mark, the name of Fort Marion being given by the United States, in honor of Gen. Francis Marion, of Revolutionary fame, in 1825, when Florida came into the Union. The fortress was erected in 1565. It witnessed the struggle between the Spanish and French; the destruction of the early Spanish settlement by the English, under Sir Francis Drake, in 1589; the bitter warfare with the English colonists of South Carolina and Georgia under Governors Moore and Oglethorpe, and lastly the rav-



FLORIDA STATE BUILDING.

ages of the Indians in the Seminole war. Its walls have sheltered Spanish garrisons, Indian slaves, English prisoners and convicts. Foundations of the fort as it now stands were laid in 1620, and after toil for a century and a half it was finally completed in 1765. It then required an armament of one hundred guns, and a garrison of one thousand men. It did not figure in the war between the States, but has been used as a place of detention for fierce Apache raiders, thus separated from their marauding brethren by the width of the continent. The reproduction is faithful; bridge and moat, watch-tower, sentry-box and parapet, curtain and bastion are exactly as in the original. In the interior, in addition to the court are a hall and several rooms for the convenience of guests and others. There is also a display of the fruit and other resources of the State.

KENTUCKY STATE BUILDING.

Kentucky occupies a space between Florida and Texas. The architect's idea in this structure was to typify the southern colonial style as distinguished from that of New England. The most striking feature of the former style is the great pillared porch in front. Another object is to suggest the better class of the old Kentucky homestead, and at the same time to give enough variety to meet the demands of the occasion, and furnish an attractive club house where southern hospitality can be dispensed. The exterior of the building is colored a rich cream, trimmed with pure white for the decorations. The material is staff, as in so many other buildings. The edifice, exclusive of porches, measures 75 by 95 feet, with the main entrance in the centre of the principal façade, under the cover of the porch. This entrance leads into a large central hall from

which open offices, parcel rooms, and a post-office. The dining room is in the rear of the building opposite the front door. On the left side of the hall is a great fireplace, and still to the left are the ladies' parlors. The dining room measures 20 by 40 feet. The commissioner' room, a private hall, sleeping rooms, bath rooms and others, are on the second floor. The three large exhibition rooms extend across the entire front of the building and open on to a wide gallery. They can all be thrown together when desired. The wood-work throughout is finished in white enamel. Maury & Dodd, of Louisville, were the architects of this building.

Just to the south of the Florida Building, and facing the Art Gallery annex, across the main avenue, is the building of Missouri. It is a massive structure, of the composite order of architecture. A long façade, pierced with deeply recessed arches, is two stories high, the upper lighted by square windows. At the west end is a low, square tower with a steep roof running to a point terminating in a flagstaff. At the east end, a taller tower, also square, surmounted with a lantern, which has a towering flag pole on its summits. At each corner of this tower is also a shorter pole, from which flags are floating. The interior of the building is divided into large halls for displays of women's work, curios, and historical relics, and there are also numerous reception halls, toilet and check rooms, parlors for men and women, reading and writing rooms, etc. The building, as far as practicable, was built of Missouri materials, by Missouri mechanics, and its rugs, carpets, curtains, and other furnishings are largely the products of the labor of the women of this State. The wool clipped from the native sheep was carded, spun and woven by them. Most of the exhibits of this State are distributed among the departmental buildings of the Fair. Nevertheless there is much here of great interest. Specimens of the fruits of the Olden farm, in Howell county, the largest orchard in the world, show what the State can do in this direction. There are also grains, grasses, and fine cabinets of woods and minerals.

Between Missouri and Minnesota is the beautiful little building of Louisiana. It is one of the most artistic constructions of all the State edifices, and is built in genuine southern architectural style.

MISSOURI STATE BUILDING.

A veranda of Louisiana woods is the most attractive feature. The building is divided into eight rooms, all of which are well utilized. One is devoted to the Acadian exhibits, from the quaint old French colony in the lovely Bayou Teche country. Another room is devoted to the relics of the French and Spanish days of Louisiana; and the third contains the richly carved antique furniture of a former Governor, which is usually kept in the museum of the Capitol at Baton Rouge. A Creole concert company and a comprehensive exhibit of the schools for negro children are worthy of inspection. Eleven beautifully carved panels, designed and executed by women of the State, form a charming feature of the exhibit. The rice industry, from the planting of the grain, through its growth, gathering and final use is shown, as are also the immense sugar industries. Other agricultural products are not neglected, and the display of woods is very fine. Last, but not least, is the Creole

LOUISIANA STATE BUILDING.

WEST VIRGINIA STATE BUILDING.

kitchen, where are served all the southern delicacies for which the State is noted.

Returning now to a point just east of the Kentucky Building, we find the structure of West Virginia. In this building, as is appropriate for a State of that region, the style is strictly colonial. It is a wide-spreading house, with great piazzas, recalling those of the historical houses along the Potomac and the James. The broad veranda makes almost a complete circuit of the mansion, and on the northern and southern fronts forms a semicircular porch. The doors and windows, stairways and halls are all of hospitable proportions. The ornamentation follows the same idea, being carried out in classic forms, in the way of festoons, and other graceful arrangements of flower and leaf. The main entrance is surmounted by the arms of the State and bas-relief. On each floor are two fine colonial fire-places, with wood mantels elaborately carved. The main floor is entered through a vestibule flanked by committee rooms, and after passing through this the visitor enters the large reception hall, having parlors with drawing-rooms and toilet-rooms. The second story contains other committee rooms, and also a large assembly room, 76x34 feet, and thirteen feet high. The exhibits from West Virginia are largely composed of minerals, and things beautiful and curious connected with mining and metallurgy. Handsome cabinets of various kinds have been constructed for this display. The building is of wood, with high pitched shingle roof, the outside being weatherboarded and painted. The interior

MARYLAND STATE BUILDING.

is plastered, with hard wood finishing, and the ceilings are of ornamental iron work. All the material used in the structure is native to the State. It is 58 by 120 feet deep, and the cost was $20,000.

Next to the east is the building of Maryland. It is seventy-eight feet deep, and one hundred and forty-two feet wide, its architecture being of the free, classic Corinthian order. This is the style from which the colonial work of the last century developed. The building is three stories high. The main entrance is through a Corinthian portico, two stories high, and at each end of the buildings are smaller ones. A spacious piazza extends the full length of the building, its top having a deck roof. A similar roof covers the two wings of the building. The structure is of frame, with iron supports, finished exteriorly with staff work. The interior is finished in wood and plaster. The front entrance leads into a reception hall, 38 by 40 feet, from the centre of which a main stairway, branching from a landing into two lesser stairways, leads to the second floor. To the left of the hall is the principal exhibition hall, 36 by 26 feet, extending upward through two stories, with a gallery at the second floor level. To the right is another exhibition hall, nearly as large, used for the women's display, and adjoining it is a ladies' parlor and a toilet room. The second floor contains three parlors on the front, and an office, reading, smoking and toilet rooms. On the third floor are the janitor's rooms, and those of the commissioners in charge. The building was designed by Baldwin and Pennington, of Baltimore.

MONTANA STATE BUILDIMG.

Next west of the Utah Building is that of Montana, which was designed by

Galbraith & Fuller, of Livingstone, Montana. It is one-story in height, of Roman style, the dimensions being 62 by 113 feet. The single story is sixteen feet tall in front, and twenty feet in the rear, with a gallery. Its frame is constructed of wood and iron, covered with glass and staff. The exterior of the building is ornamented with heavy molded and fluted pilasters with Roman caps and bases. The two side wings in front with the main entrance are ornamented with heavy pediments, representing clusters of fruit. This main entrance is twenty-eight feet wide and sixteen feet high, with a large Roman arch supported by columns, molded caps, and bases with balustrades between. On either side of the arch are panels containing the seal of the State. These are 4 by 5 feet, and of solid sheet gold. Above the arch is a pedestal supporting a miniature mountain peak upon which stands an elk, nine feet high, the antlers measuring ten feet from tip to tip. Entering the building, one passes through a spacious vestibule with paneled walls and ceilings and floor of marble. From this vestibule are entrances to the ladies' and men's reception rooms and parlors, and the lobby. The lobby is twenty-two feet square, and is covered with a glass dome thirty-eight feet high. Its walls contain eight panels of Georgia pine, recording historical events of the State. To the right and left are entrances to reception rooms and parlors. The gallery is used for special exhibits of the State. In addition to what has been named, the building contains the usual rooms for public comfort. The cost was some $15,000.

IDAHO STATE BUILDING.

The building of Idaho is next in order, and it is conceded to be one of the most striking and creditable structures of all. The building typifies the spirit and conditions of the State. It is three stories high, with a foundation of lava and basaltic rock, and is made to represent a three-story log cabin. The timbers used are cedar logs, stripped of their bark, and presenting the appearance of age. Swiss balconies encircle the building, and it is roofed with "shakes," held in place by rocks. The chimneys are large and rough, to imitate those of actual pioneer days. An arched stone entrance opens into a large hall, at the end of which is a stone fireplace with log mantel. The remainder of this floor is divided into offices, sleeping and toilet rooms. By stairways on either side of the fireplace an upper hall is reached, the windows of which are glazed with Idaho mica. In front of this hall is the women's reception room, representing a miner's cabin. It has a fireplace of rock, and its andirons, door-latches, etc., are made in imitation of miners' tools. At the rear of the hall, the men's reception room is made in imitation of a hunter's and trapper's cabin. Its fireplace is made of lava, and the andirons of bear traps and fish spears. The other hardware therein represents arrows and other Indian weapons. The entire third floor is one large hall for exhibits, receptions, etc.

The building of Virginia completes this circuit of State club-houses. It is the exact representation of Mt. Vernon, the building in which George Washington lived and died. It was a present from his brother, Lawrence Washington, and was built in the early part of the last century by his father. The main building is 94 by 32 feet, with two stories and an attic, and a two-story portico with large columns extending along the whole front. Altogether there are twenty-five rooms in the structure. They include the banquet hall, the library, Washington's chamber in which he died, and Mrs. Washington's chamber in the attic. She removed to this room after the death of her illustrious husband, because it was the only one in the house which looked out over his grave. Nothing modern is seen in the building except the people, and the library of books, by Virginia authors. The furniture is all antique. There are many heir-looms of old Virginia families, a rare collection of

VIRGINIA STATE BUILDING.

relics of colonial times and the Revolutionary war, and other antiquities, among which is the original will of George Washington. No visitor fails to thoroughly investigate this structure and all that it contains.

The Delaware State Building is just to the south of Maryland.

DELAWARE STATE BUILDING.

Like the State itself, it is small, though handsomely built. It is of the southern colonial style of architecture, and constructed entirely of Delaware material. The building is 60x58 feet, and cost $7,500. It has arched and pillared entrances, and ornamental balustraded cornices, with a very handsome portico on the west end, whose fluted columns reach the whole height of the building. In the interior are seen many characteristic objects worthy of attention.

The State Building of New York is one of the largest of all, and one of the most expensive. It is practically the only State Building that has been designed in palatial form. The building is two hundred and fourteen feet in length and one hundred and forty-two feet in depth, while from grade to the apex of the tower it is ninety-six feet in height. A magnificent staircase, forty-six feet wide, gives access to the terrace on the south from which the loggia is reached. At the entrances to the building are casts of the celebrated Barberini lions, and the four pedestal lamps lighting the terrace are reproduced from the best ones in the museum at Naples. The porticos east and west of the building have a diameter of fifty feet. On either side of the main entrance in the niches outside the building are placed the busts of George Clinton and Roswell P. Flower, the first and the present Governors of the State. In the

NEW YORK STATE BUILDING.

other niches, in the façade of the second story, are figures of Henry Hudson and Christopher Columbus, the four works of art being the production of Olin Warner. The exterior of the building is lit by electricity. Above the arched entrance is the great seal of New York, ten feet high, lighted by myriads of tiny lamps. The interior of the building has rooms equipped with everything possible for convenience and utility. The mural decorations are exceptionally fine and attract great attention. There are historical collections and other exhibits of interest. A roof garden is one of the most attractive features of the building. It was designed by McKim, Meade & White.

The next-door neighbor to New York at the Fair, as in reality, is Pennsylvania. It is a stately edifice, surmounted with a clock tower, which reproduces the historic clock tower of Independence Hall in Philadelphia, with the old Liberty Bell. The first and second stories are of Philadelphia pressed brick and the floors of native marble and wood, while the walls are ornamented with wainscot paneling from Pennsylvania forests. The front entrance opens into a rotunda thirty feet in diameter and forty feet high. In the rear the exhibition room extends the entire width of the building, its walls ornamented with portraits of distinguished Pennsylvanians. Many rare documents and relics of historical interest are displayed, the grandest of which is the old Liberty Bell, whose brazen tongue proclaimed to all the world the birth of the Republic. There are statues of William Penn and Benjamin Franklin, and many historical portraits, maps and books. There are also allegorical groups of statuary, one

OKLAHOMA, ARIZONA AND NEW MEXICO'S BUILDING.

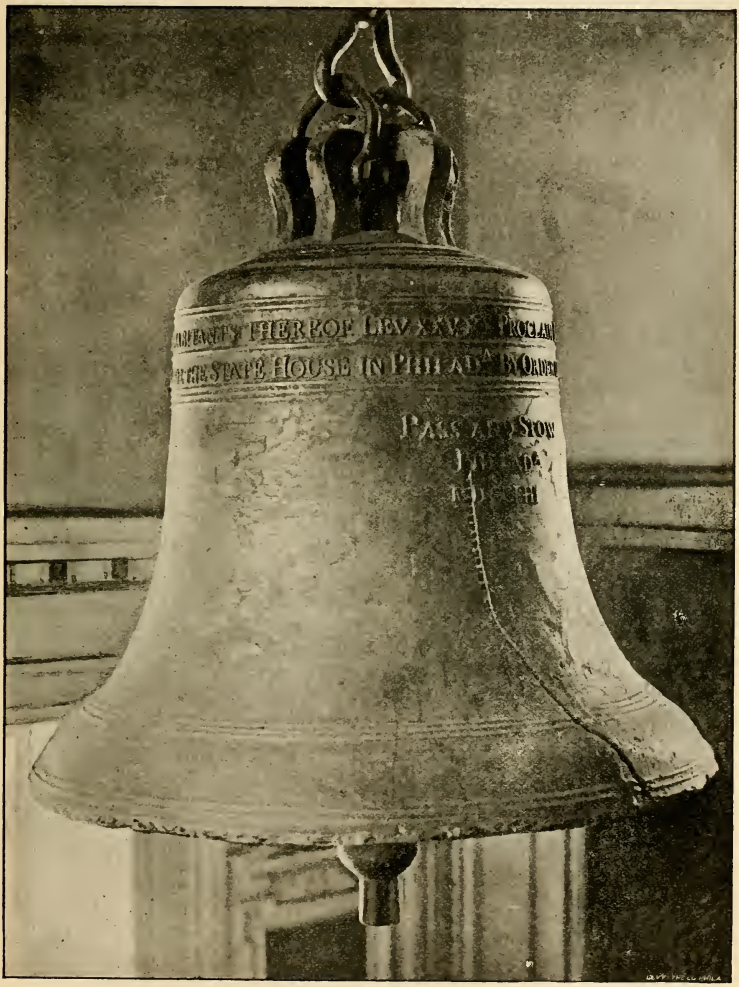
PENNSYLVANIA STATE BUILDING.

indicative of mines and mining, and the other of science, manufactures and agriculture. The architect of the building was Thos. P. Lonsdale.

The joint Territorial Building, in the erection of which Arizona, New Mexico and Oklahoma shared, is just to the north of Pennsylvania. It is a modest little structure, but neat and attractive. The exhibits are very fine, when it is remembered that these Territories are yet in their infancy. Oklahoma, with her grain, grasses, fruits and cattle products; Arizona with her minerals, sub-tropical fruits, cacti and other flowers and the hand work of her Indians, such as Navajo blankets, Moqui water baskets, and Apache whips and braided work; and New Mexico with her display of gold, silver and mining appliances, her fruits and wines, and her artistic gold and silver filagree work done by Indian and Mexican artists are certain to attract attention. Characteristic views of the dwellings, the scenery and the people of these Territories are shown.

NEW JERSEY STATE BUILDING.

Going now to the extreme northeastern corner of the Park the visitor reaches the State Building of Iowa. It is made up of additions to a building which already stood there known as the "park shelter." The permanent portion is built of brick and stone, with the walls open to the roof, and broad projecting eaves. With this, and the addition, a very large structure is formed of harmonious architectural designs. State, national, and territorial seals are used in the decoration. Various industries are portrayed in low relief in the columns, and on the main walls, under the porch, are authentic relief portraits of the Indian Chiefs, Black Hawk and Keokuk. The



LIBERTY BELL.

permanent portion of the building is used for the exhibit of a minia-

ture reproduction of the Sioux City "Corn Palace." It is unique and of remarkable interest. There are also exhibit rooms in the other portions of the building, as well as all conveniences of the public.

In the triangle opposite the Iowa Building, New Jersey and all the New England States have constructed buildings. That of New Jersey is a partial reproduction of the historical building at Morristown which was occupied by General Washington as his headquarters during the winter of 1779 and 1780. It is said that this building has sheltered more people celebrated in colonial times than any other in America. It is not intended for exhibition purposes, but rather for the use and convenience of visitors as a club-house. The architect was Charles Alling Gifford, of Newark.

CONNECTICUT STATE BUILDING.

Connecticut's building is intended to typify the prominent feature of the high grade residences of this State. It is seventy-two feet square and two stories high, the exterior being weatherboarded and painted white. The roof has five dormer windows and is decked on top. It is devoted to social purposes rather than to exhibits, its wide balconies and spacious rooms adapting it well for this use. There are, however, many interesting relics to be seen in the building.

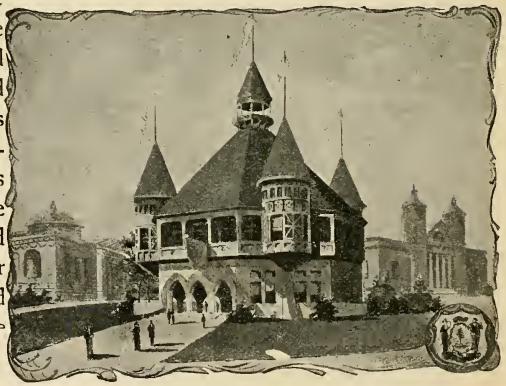
Its next-door neighbor is the New Hampshire Building, which is constructed in imitation of a Swiss chalet. The building is comparatively low, with low pitched roofs and overhanging eaves. The first story is of plaster work, the door and window frames being surrounded with various kinds of New Hampshire granite. The

IOWA STATE BUILDING.

second story and gables are covered with heavy siding of hard pine, oiled and left in the natural wood color. The hall is surrounded by a wide balcony on the second story and has two large fireplaces. There is a fine collection of New Hampshire views and many other exhibits. The architect of the building was George B. Howe, of Boston.

NEW HAMPSHIRE STATE BUILDING.

The Maine Building is an octagon in shape, sixty-five feet in diameter, and two stories high. Its dome is surmounted by a lantern over which is a steep roof. The first story is of granite taken from the State quarries, showing the various textures and colors. The second story exterior consists of four balconies separated by round bays projecting over the granite below, finished in wood and plaster panels, and covered with a roof of Maine slate. Within the building are maps, paintings, and many historical curios. The architect was Charles S. Frost. The cost of the building was $20,000.

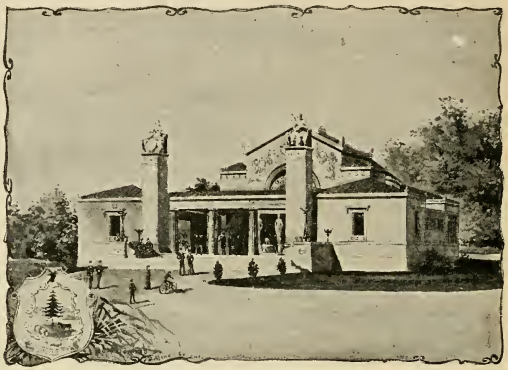


MAINE STATE BUILDING.

The Vermont State Building lies just to the west of Maine, facing

MASSACHUSETTS STATE BUILDING.

the east annex of the Art Galleries. It is a unique and attractive little structure, designed by Jarvis Hunt, of Weathersfield. The general idea is that of a Pompeian residence. White marble, which is one of the leading industrial products of Vermont, is applied to the classic forms of architecture. Passing through a vestibule between pillars surmounted by emblematic figures the visitor enters an open court, having in its centre a white marble fountain. This court is flanked by small rooms, while beyond an entrance opens to a semicircular reception hall which occupies the rear of the building. The material of the walls and of most of the ornamentation is staff, but considerable is employed in the internal finish and decoration.



VERMONT STATE BUILDING.

RHODE ISLAND STATE BUILDING.

Little Rhode Island does herself credit in the structure which she displays. It is in the style of a Greek mansion, 39 by 34 feet, with a semicircular porch, 12 by 22 feet. The front entrance is through three arched openings through the semicircular porch. The col-

WASHINGTON STATE BUILDING.

umns and pilasters are surmounted by Ionic tablets with decorated moldings. A balustrade surrounds the entire roof with ornamental urns over each pedestal. In the centre of the hall is a fireplace and marble mantel of historical interest. There are other handsome rooms and many relics which are worthy of the attention they attract.

Massachusetts completes the group of New England States and this section of the Park. Its building is a reproduction of the residence of John Hancock, which stood on Beacon Hill, in Boston. It is three stories high, surrounded in the centre by a cupola, and the exterior finished in staff in imitation of cut granite. Above the cupola is a flagstaff with a gilded codfish for a weathervane, and a liberty pole eighty-five feet high stands in the front porch. The house is surrounded by a raised terrace filled in front upon one side with old-fashioned flowers and foliage. The main entrance to the building opens into a spacious hall with a tiled floor, and facing it is a broad colonial stairway leading to the rooms above. The front parlor is furnished by the Essex Institute, an old historical society. The floor of the general reception room is of marble, and its walls are covered with tiles, the beams and rafters being bare, and the mantel high, as in the old Dutch houses of New York and Pennsylvania as well as of western Massachusetts. Peabody & Stearns, of Boston, were the architects of the building, and the cost was $50,000.

SOUTH DAKOTA STATE BUILDING.

Returning now to the place where we first began our visit to the State Buildings, we find another group of them extending south-

COLORADO.
NIL SINE NUMINE
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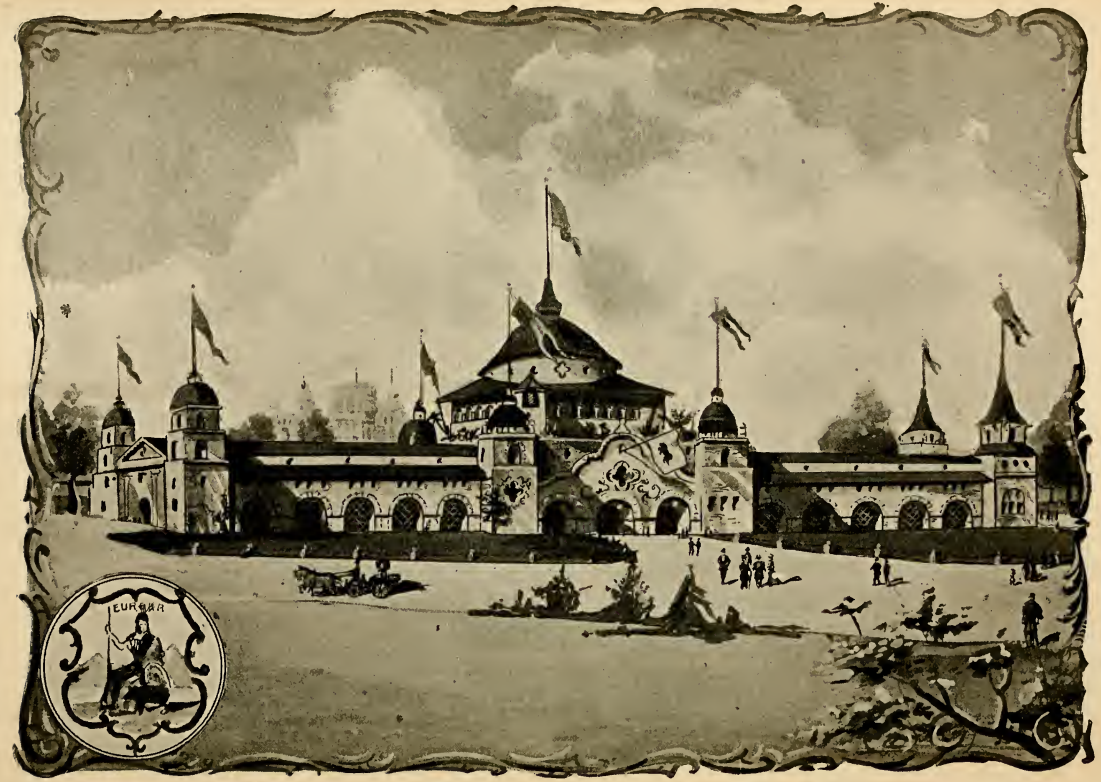
ward instead of eastward. Directly opposite the Nebraska Building, which was the first one visited, is that of South Dakota. It has a prominent and commanding location, as it deserves. The building measures sixty feet by one hundred feet and is two stories high. As far as possible, South Dakota material only was used in its construction. The exterior is coated with Yankton cement, finished in imitation of cut stone. Mines and minerals, grains and grasses, fossils, pottery, clay, etc., have been given due attention, and form a large display, showing the diversified interests and resources of the State. Its dairy, sheep and cattle products have not been neglected, and a pomological exhibit is surprisingly fine. The educational department also makes an excellent showing. Curious fossils from the bed of the Cheyenne river, immense blocks of fine coal from her coal fields, and photographic views of her varied scenery help to make up the creditable display from this State.

Many visitors name the Washington State Building, which lies next to the south, as the most unique and pleasing of all the State Buildings, and as exhibiting in the best degree the resources of that State. The foundation is of timber brought from that State, the largest logs being fifty-two inches in diameter and one hundred and twenty feet long of perfectly clear and sound timber. Much larger ones could have been obtained, but the railroads were unable to transport them. The dimensions of the building are 140 by 220 feet. The exterior is covered with Puget Sound lumber, and it is roofed with the famous Washington cedar shingles. The building consists of a central structure with a wing at each end joined to it by a closed colonnade. The exhibits include examples of the resources of the State in coal, gold, and other minerals; in timber, grain and fruit, and in all sorts of manufactured wares. The shipping and fishing industries are also exploited, and no visitor can enter the building without being impressed by the magnitude and variety of the resources of our most northwestern States.

Colorado comes next in order with a handsome structure in the style of Spanish renaissance. It is one hundred and twenty-five feet by forty-five feet, and is crowned with two slender towers eighty feet high. A handsome entrance forty feet wide leads to the



CALIFORNIA STATE BUILDING.

inner rooms, which are filled with interesting exhibits. It is fitted with Tennessee marble and onyx in beautiful forms, while the red Spanish tiled roof gives a picturesque and pleasing effect.

INTERIOR OF CALIFORNIA BUILDING.

The immense California Building which forms the southern extremity of this chain of State Buildings is a reproduction of a Catholic Mission of the days of the Jesuit régime. It is four hundred and thirty-five feet long and one hundred and forty-four feet wide, and is crowned with a dome one hundred and thirty feet high. The walls are a close imitation of the adobe, or sun-dried brick, used in the original structures. The roof is covered with tiles similar to those covering the old missions. The principal features of the building are copied from the beautiful old missions at Santa Barbara. The whole mass, otherwise sombre, is relieved by a large central dome, around which is an open roof garden filled with semi-tropical

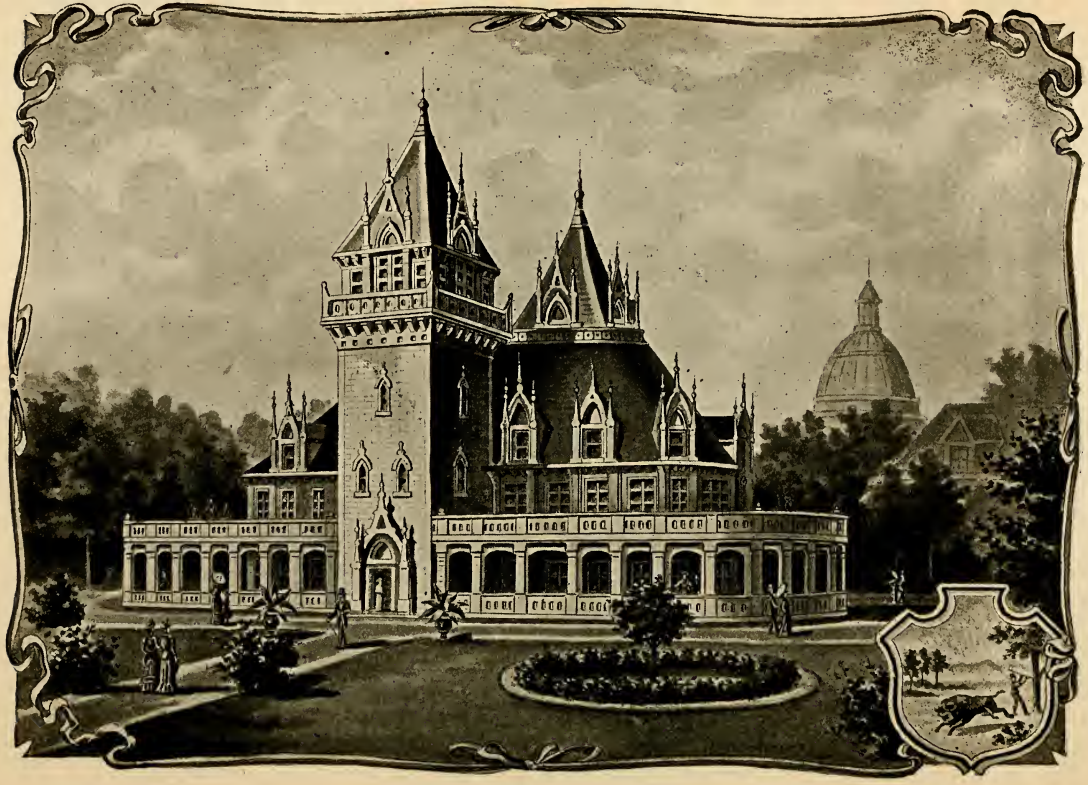
WISCONSIN STATE BUILDING.

plants. These glorious California products add a strong element of grace and beauty. The building is further embellished by rich molded windows over the arched entrances, while old mission bells in its towers ring frequent melodies. The departments for exhibits are arranged along the sides of the building on the ground floor, while the offices are grouped in the second story. The exhibits consist of minerals, petrified wood, native wines, and other viticultural displays, beside representations of many other industries of the State.

Retracing one's steps northward, the Illinois Building is reached directly opposite the California Building. It is built in the form of a Greek cross, of which one axis is four hundred and fifty feet long by one hundred and sixty feet wide, and the other two hundred and eighty feet long and ninety feet wide. In size and cost, as well as in magnificence, it is entitled to take rank with the departmental buildings of the Fair; but its architecture has shared the fate of that of the United States Government Building in failing to please the critics. At the intersection of the arms of the cross rises a dome with an internal diameter of seventy-five feet and an inside height of one hundred and fifty-two feet. The galleries encircle the dome, and above all rises a round lantern which extends two hundred and thirty-four feet above the ground.

ILLINOIS WELCOMING THE NATIONS, ILLINOIS BUILDING. (*Bracken.*)

The State has the largest and finest exhibit of all the States in the Union. The departments of display include model public school and kindergarten schools; exhibits of the public schools, the Normal schools, and the University of Illinois; the exhibit of the State Laboratory of Natural History; an exhibit of the fish commission, the railroad and warehouse commission, and the ex-



INDIANA STATE BUILDING.

perimental station; and exhibits of agriculture, geology, horticulture, and woman's work. In the northern wing is a fire-proof room called Memorial Hall, which contains historical objects from the State capitol at Springfield. The general design of the building is very similar to that of the capitol.

The next building northward is that of Indiana. It is Gothic in design, with cathedral windows, turrets and towers. At either end a tall spire rises above the roof to a height of one hundred and fifty feet. A wide veranda extends entirely around the building and the total dimensions of the structure are 53 by 152 feet. It presents a massive appearance and is three stories high. The first story is Indiana gray stone, while the second and third are wood covered with staff. The doors and interior finish are in oak, carved and polished, and the floors are laid in mosaic. There are fine displays of historical portraits, as well as archæological, mining, manufacturing, agricultural and educational exhibits. On the front of the building is a statue of heroic proportions, the work of Miss Jeannette Scudder, of Indiana. It represents a typical Indian beauty and is called the "Maid of the Wabash."

The Wisconsin Building is next northward. It is 50 feet deep, and has a frontage of 90 feet exclusive of its four great porches. It is one of the handsomest of the Fair, and might be taken for a magnificent suburban residence. The walls for three feet are of Lake Superior brown stone, and the first story is of Menominee red pressed brick. The rest of the exterior finish is in shingles. The front and rear porches are supported by massive brown stone pillars, one at each corner, and one at each side of the main entrance. In the angles of the gables is seen the coat of arms of the State, modeled by Miss Eunice Winterbotham, of Eau Claire. The building is modern in architectural style, and is that generally used in club houses and large private residences. The rooms are handsomely finished and decorated, and form a delightful place of resort for Wisconsin people.

The building of Ohio, which is next reached is intended as social headquarters for people of that State visiting the Fair, and not for exhibits of any kind. Its architecture is of the style of the Italian

OHIO STATE BUILDING.

Renaissance, simple and dignified. The dimensions are 100 by 80 feet, exclusive of bay windows, porticos and terraces, while the two stories are about thirty-five feet in height.

The last of all the State Buildings, which adjoins Wisconsin, is the imposing structure of Michigan. It is 104 by 144 feet in ground area, and three stories high. There is a veranda across the entire front, and from the centre rises a tower pierced with windows and balconies and 131 feet high. At the summit of the tower are four clock faces. The main entrance opens into a tiled reception hall sixty-two feet wide and extending the entire depth of the building. Wood fireplaces with high oak mantels adorn each room opening out from the hall. On the second floor is a fine assembly hall as well as an exhibit room. Here are shown specimens of the fauna and flora of the State, and a press exhibit showing sample front pages of every newspaper and magazine published in Michigan. The pomological display presents five hundred models of the various fruits grown in Michigan. The salt exhibit is especially interesting, as are also those of woman's work, educational, grains, grasses, lumber, etc.

NORTH DAKOTA STATE BUILDING.

Now that we have exhausted the list of State Buildings, it is easily seen that they are applied to purposes of social entertainment, and for club house uses rather than for exhibit purposes. It is well that this should be so, for the main buildings of the Fair provide ample opportunity for all regular exhibit displays. For club house purposes they are constantly utilized, and no feature of the Fair is more generally admired than this splendid collection of representative State edifices.

MICHIGAN STATE BUILDING.

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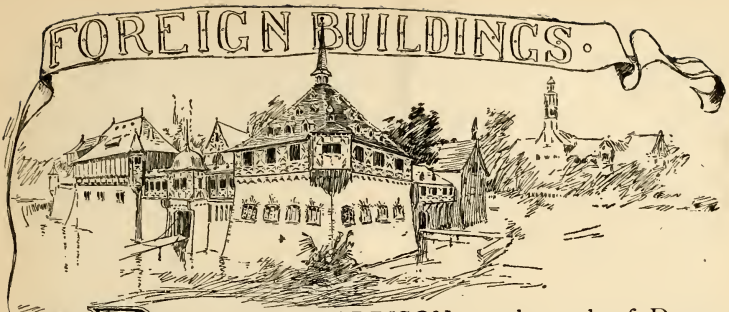
FOREIGN BUILDINGS.



PRESIDENT HARRISON, on the 24th of December, 1890, issued official declaration that the conditions providing for the holding of an international exposition were complied with, and inviting all the nations of the earth to take part in the commemoration of the discovery of America. From that day to this throughout the world of nations there has been such activity in the preparation of exhibits for the great World's Fair as has never been seen before. The countries of Europe, Asia and South America with practical unanimity accepted the invitation and began work. To-day the results of their efforts show in the wonderful display at Jackson Park. In the north portion of the park stand a score of buildings erected by the representatives of foreign governments and filled with a display of the resources of their respective countries. This is entirely independent of the exhibits made in the various departmental buildings from foreign countries.

The Chicago Exposition can more truly claim to be universal than any of its predecessors. The Centennial Exposition, on account of the event which it commemorated, could not receive the most enthusiastic official endorsement from the government of Great Britain. The expositions which have been held in Europe have always been subject to the political and social rivalry and jealousy among the nations. Here for the first time all may meet on neutral ground. The history of the means by which interest was first awakened in foreign countries is interesting, and would include the formation of

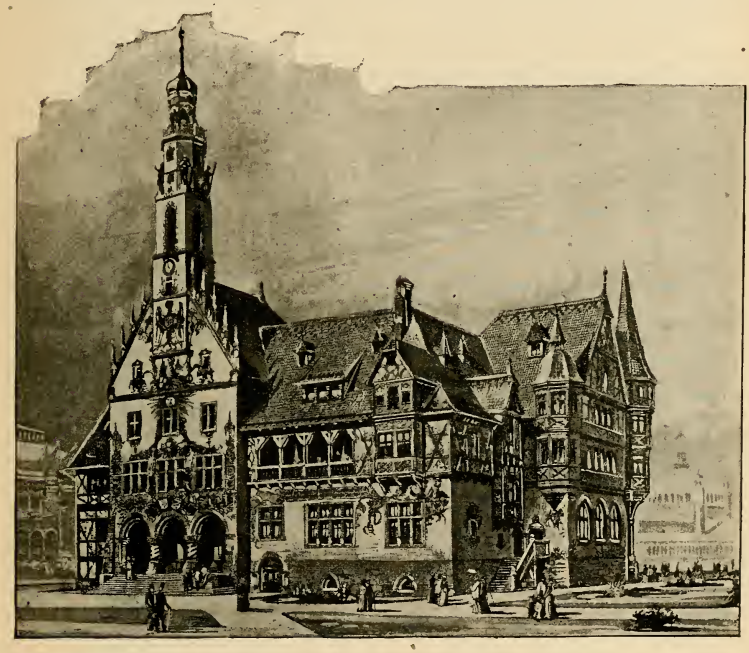
successive commissions to Europe and the return of commissioners to this country; but it is in results that our present interest lies.

Japan leads all foreign countries in the amount of her appropriation for display at the Fair, and it is probable that in the interest excited it will take the same stand. The total amount appropriated by the government is nearly $650,000. The most prominent people in the Island Empire were interested in the enterprise which has been carried to a magnificent conclusion. The display made by this country in the buildings of the various departments has already been outlined, but the centre of Japanese attraction is at the

THE JAPANESE PAVILION.

north end of the Wooded Island. The Japanese government offered, if a suitable location should be granted, to reproduce a building of the most ancient style of architecture of Japan, and to make the city of Chicago a gift of the structure at the close of the World's Fair. The offer was accepted, of course, without delay. The structure now stands in the middle of two acres of space in the most charming location of the whole grounds. It is copied from one of the finest specimens of ancient Japanese architecture. The structure takes the form of a great temple in three parts, a main body and two wings, symbolizing the phœnix, as they declare. The Japanese name of the structure is Ho-O-den, and the temple of which it is a

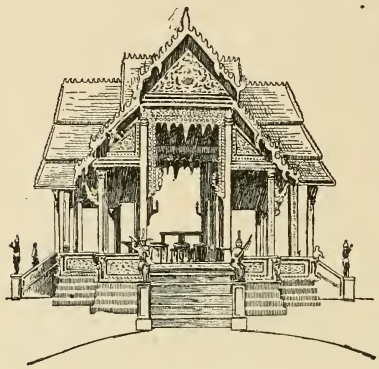
fac-simile is said to date back to the year 1052. But two conditions were made in offering this magnificent gift to the city of Chicago. One was that the building and garden surrounding it shall remain permanently at the place of erection and be kept in good repair, the other that at least one room be reserved for a display of Japanese works of art, always to be open to the public. The lumber of



GERMAN BUILDING.

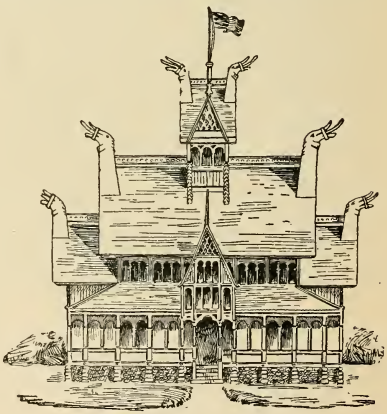
which this edifice was constructed was all prepared at Japan and was brought here and put together by Japanese workmen. Within it are exhibited articles of unusual interest. In one wing are old bronzes, arms, armor, pottery and lacquer; all articles from 1,000 to 4,000 years old. Some of this illustrates arts which have been lost, and includes exhibits of extremely great value. In the other wing are shown Japanese products 400 years old and more;

illustrative of the condition of their people when Columbus set out to discover their country, for it was the tales about Cathay and the wonderful island near by that strongly influenced Columbus; indeed the discoverer thought when he reached Cuba that it was the island of Cipango or Japan. In the main or middle building the Japanese show goods characteristic of their country at the present time.



SIAMESE PAVILION.

Upon the whole north end of the Wooded Island Japanese gardeners have expended their skill and ingenuity in the cultivation of flowers, dwarf trees, and those landscape and garden effects in the production of which they are unrivalled. It is only forty years since the empire of Japan was opened up to traffic with civilized nations by that notable expedition of Commodore Perry. Japan practically introduced herself to the world twenty-three years later at the Centennial Exhibition, and now with more kindly feeling toward the American nation than toward any other in the world, she comes before our people with one of the richest displays ever made, and leaves the most of it as a memorial gift to the city of Chicago.



NORWEGIAN BUILDING.

Western Europe has found it necessary to be very industrious in the effort to excel other parts of the world when Japan is the

competitor, but nation after nation accepted the invitation from the President, and in every instance the displays are creditable, not only those included in the departmental buildings but also in their own

SWEDISH BUILDING.

structures erected as official headquarters. The intense rivalry between the Germans and the French has been fortunate for the Fair, for each country has striven to outdo the other, with the result of making each exhibit a notable one. The more prominent of the

foreign buildings are ranged along the Lake shore from the naval exhibit northward, and here as neighbors are the buildings of France and Germany; each one is a magnificent structure of large size and

VENEZUELA BUILDING.

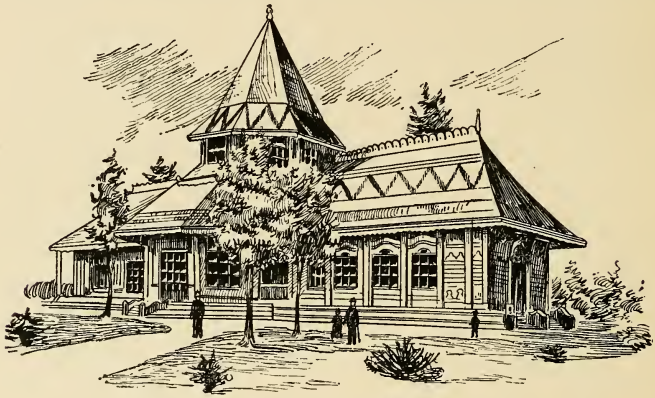
cost. The most southerly of this group is the building of Great Britain, which stands just to the north of the battle-ship. Just across the promenade from the British Building is the one erected for its

American colony, Canada. Next to the north is the German Building, then the Austrian, then the Ceylonese, and last in the row the French Building. Returning southward on a line just west of these are the buildings for Ecuador, Guatemala, Costa Rica, Norway, Turkey, Denmark, Sweden, Nicaragua, Colombia, Hayti and Brazil. This exhausts the list of the principal foreign buildings of an official character, though it does not by any means include the countries exhibiting in the main buildings of the Exposition, although not occupying structures of their own. There are also tea houses and other refreshment stands of many foreign nations scattered over various portions of the grounds.

One will very naturally begin his visit to the colony of Foreign Buildings, which line the Lake Shore, with the French structure, which is situated just to the southeast of the last State Building. There are two pavilions in this structure, connected by a semicircular colonnade, at the centre of which, and in the court thus made, is a very fine fountain elaborately decorated with bronze statuary brought over from France. The court of the pavilion thus made faces the Lake, the enclosure thus forming a delightful retreat. The smaller pavilion is on the south side, and contains the large room for the city of Paris. It was fitted up and decorated by the merchants of that city, the walls being hung in the finest tapestry, and the room containing only works of art and fine bric-a-brac. The pavilion on the north contains one very large room elaborately decorated in staff, with ornamental ceiling and cornices. The panels between the pilasters and walls contain some of the best pictures of France. The room of this pavilion is entitled "Lafayette," and it contains all the gifts, mementos, historical relics, and things of interest regarding the dealings between Lafayette and this country. This pavilion includes also suites of offices for the French officials. The sketches for the building were made in France, and most of the staff models were made there and sent here. The exterior is in the style of the French renaissance, entirely of staff and elaborately decorated. There is a very large group of statuary on the north façade, and several historical paintings placed on the exterior of the building. The greatest dimen-

sions of the building are 250 by 175 feet, and it is but one story high. In addition to the exhibits already mentioned are models and plans of the school, prisons, hospitals and sewerage system of Paris. It is thought by many that this building contains more of interest for Americans than any other foreign building on the ground, on account of the relics of the days when France was our old Revolutionary ally.

The next building, as one passes down the Lake Shore, is the Ceylon court. It consists of a central octagonal building with two



CEYLON BUILDING.

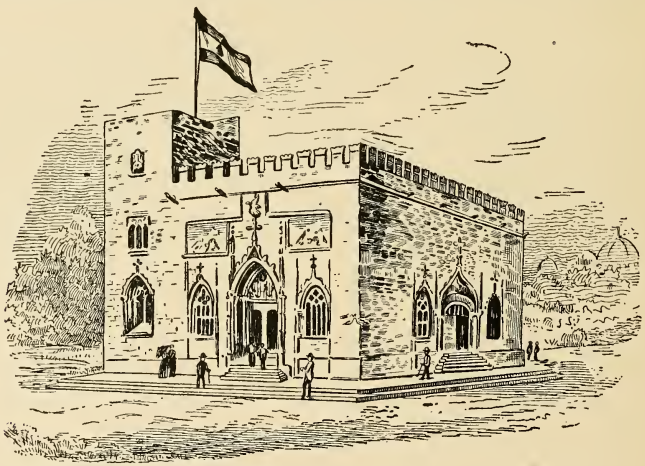
wings, the length of the entire court is 145 feet and the width of the central hall is 50 feet. The architecture partakes of the Dravidian style as it appears in the ruins of ancient temples throughout the islands. The beautiful Singhalese woods used in this building were cut and fitted in Ceylon and shipped here to be put together. A projecting basement sustains the entire court, which is reached by four highly carved staircases, two leading into the central building, and one into each wing. These stairways and the general scheme of the court are copied from old ruined temples of Ceylon. There are carvings in bas-relief on the doorway and many other portions of the structure. The decorations of this building are particularly rich and intricate, and are well worthy of

careful study. The exhibits within are those of the products of that tropical island, such as silks, spices, pearls, ivory and tea. There is an air of orientalism about it that is most enchanting to the American visitor, and the court is always crowded.

The building of Norway is just in the rear of that of Ceylon. It is built after the model of the old "Stavkirk," a peculiarly Norwegian style of architecture which dates back to the twelfth century. It is an oddly built cross gabled edifice, the peaks of its gables ornamented with decorations similar to those with which the Norsemen of the time of Lief Erikson were wont to embellish the prows of their sea-going vessels. In size the building is 60 by 25 feet, and it is constructed of Norway pine. It was planned and built in sections in Norway and then taken down and sent here and set up by Norwegian workmen.

The German Building occupies a commanding position, on the Lake Shore, southeast of Ceylon. It is the handsomest and most expensive of all the foreign edifices. The plans were drawn by Johannes Radke, of Berlin, the architect for the German Government. It is seventy-eight feet in height, and is crowned with a tower which extends 150 feet into the air. In the belfry are hung three huge bells of steel. The building is a combination of several styles, and though thus contrasting in its parts is not lacking in harmony. The centre is in the form of a chapel, rich in decoration. Bay windows, projecting balconies and turrets lend it a most picturesque appearance, closely resembling an old German city-hall, such as may be seen even now in some of the ancient towns of the empire. The steep roof is covered with shining glazed tiles imported from Germany. The roof corners, water spouts, etc., down to the large lantern in front of the tower, are of brass and bronze, but the interior of the building is even finer than the exterior. After passing through the magnificently decorated reception rotunda, to the left of which is the grand reception-room, and the office of the imperial German commissioner, privy counsellor Adolf Wermuth, the second hall is reached. This, in fact, is a separate wing some forty feet in height and divided by an arched passage. The pillars everywhere are heavy, short and solid

throughout, and the arches are semicircular, the style being early German renaissance. Balconies rise in tiers on all four sides of this vast interior space, the heavy timber and castings used in their construction being richly painted and decorated. The construction of this involved an expenditure of $250,000. Besides being the central point for German interests represented at the Fair, there are also many exhibits of importance here included. The German publishers make a comprehensive general exhibit of their wares; the art of printing being, above all, well illustrated by a large assortment of magnificently bound volumes of every kind, especially rare scientific works. The second large collective exhibit is placed in the chapel, and is one of modern church art. There are very fine stained and painted windows, magnificent church vestments,



SPANISH BUILDING.

costly and artistic vessels for sacred use, handsome illuminated missals and prayer books and Bibles, and, finally, a collection of statues, crucifixes, etc. The tiles of the roof, the antique furniture, the wooden ceilings, and the handsome carpets and rugs throughout the building are all contributed by German manufacturers as exhibits.

The Spanish Building is a reproduction of a section of the silk exchange at Valencia, Spain. The erection of this building was commenced in 1492, previous to the departure of Columbus' fleet. The section shown represents the column hall and the tower wherein all defaulting and bankrupt merchants were confined. Eight large columns, two and one-half feet in diameter, support the roof of the hall. The building has a frontage of eighty-four feet, and it is ninety-five feet deep. It is occupied by the officers of the Spanish commission, and as a reception-room for visitors. There are not many exhibits, though some relics of Columbus are shown.

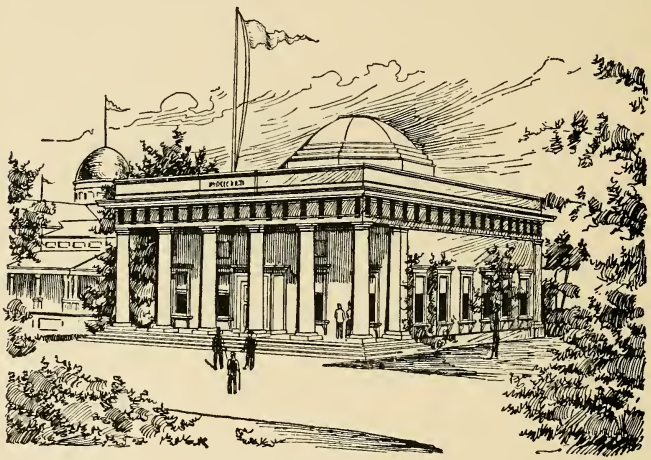
CANADA BUILDING.

Several of England's colonies have erected buildings of their own. Notable among these is Canada. The Canadian pavilion covers nearly 6,000 feet and cost about $30,000. It is two stories high, and has a beautiful site facing the Lake. It is almost entirely devoted to offices and to rooms for public comfort, there being but few exhibits in the building. In order to show the different woods indigenous to Canada, the interior walls, ceilings and floors of the pavilion are finished in wood highly polished, showing the natural grain. Each province furnished the wood required to finish the rooms to be occupied by its commissioners.

Just to the west of this building is that of another English

colony, New South Wales, which is called "Australia House." It is classical in design and ornamentation, and is sixty feet square, with an additional space devoted to porticos. The portico roof is supported by Doric columns, and there is a cornice, frieze and balustrade around the building. The exterior of the structure is staff. The central portion of the building is occupied by a hall thirty feet in width, and a central dome surmounts the whole.

The British Building, better known under the name "Victoria House," is the next to be considered, and is the last one in order of those on the Lake Shore. It is near the naval pier which



NEW SOUTH WALES BUILDING.

shelters the battle-ship. The building is generally characteristic of the best type of English half-timber houses of the time of Henry VIII. Terra cotta, however, is used extensively in the lower story, with red brick facing and mullioned windows. The upper portion is constructed of natural oak timber with overhanging gables and tiled roof. The centre of the main façade, which is on the inland side, is recessed, with steps leading from both sides up to the covered porticos which open into a large central hall. The exhibits here are numerous and excellent. One of great interest is a large

scale map showing the discoveries made by England in America. The educational exhibit is interesting as well as that of the post-office. The building is largely equipped with handsome offices for the British commissioners, and with reception-rooms, etc.

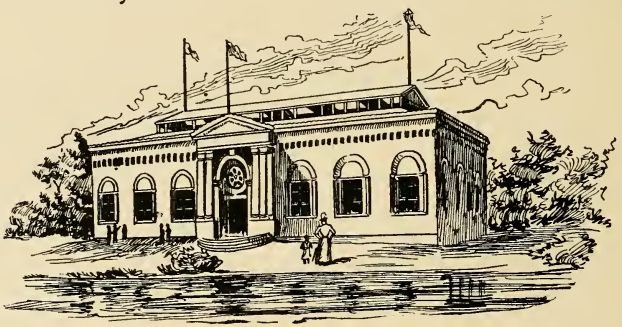
Returning now to the westward, the visitor reaches the building of Hayti. It is in the southern colonial style adapted from the Grecian. Broad piazzas flank three sides, while a central dome rises above the building. The piazzas are twelve feet wide, and on the pediment above the portico is the coat-of-arms of the republic. The front entrance opens on a large hall, in the centre of which is a beautiful statue, "Reverie," by Laforestrie, a native sculptor. In a room in the rear coffee of Haytian growth is served to visitors. All the exhibits of this republic are collected here instead of being scattered among the main buildings. There are various relics of the aboriginal inhabitants of the island and of Columbus, and the bust and relics of Toussaint L'Ouverture, the first president. Coffee, sugar, liquors, syrups, fibres, minerals, plants and native women's work may be seen.

Across the promenade from Hayti is the building of Siam. It is a royal pavilion, erected by the Siamese government, from a design by a native architect. Native wood and other material and native labor alone were used in its construction. It is a small building, twenty-six feet square, with a front elevation of thirty-two feet. The wood used is teak, of the fine kind used in the building of the Malay proas, and the façade and roof have been beautifully carved and gilded. These carvings, all done by hand, are exquisitely beautiful, and represent the work of the best Siamese artists. Although her displays are not confined to this building, Siam here shows many exhibits of gems, rosins, dyes, silks, cottons, grains and a very fine display of manufactured and leaf tobacco. Some of the native boats are wonderful, and the work of the native women is very fine.

Adjoining the Siamese Building is that of Costa Rica. It is situated at the northeast corner of the North Pond facing the water, and its location is one of the best within the park. The building is 103 by 60 feet and 50 feet in height. It is of the Doric order

of architecture, with a fine portico supported by large pilasters. The inside walls are plastered, and the walls and timber work are becomingly frescoed. The building cost $20,000, and its particular interest is in a magnificent display of tropical birds and plants.

Just to the south of Costa Rica is the building of Guatemala. The building is square and measures 111 feet on each side. It is in Spanish style of architecture suitable to the country which it represents. In the centre of the building is a large court with a gallery, and in the court is a fountain from which the water dashes. Each corner of the building is surmounted by a decorated tower; the ornaments on the walls represent tropical plants and flowers. The most interesting exhibit of Guatemala is her coffee, and at a distance of thirty-five feet from the main structure is a small rustic



COSTA RICA BUILDING.

kiosk where this beverage is served. The space around the building was converted into a large garden with coffee, bananas, and other tropical plants natural to the country. There are landing places on the Lake opposite the principal entrance to the building, and the amount spent in the entire work was more than $40,000.

The Brazilian Building has a splendid location southwest of Guatemala, and at the head of a point of land extending into the North Pond. The architect of it was Lieut.-Col. Francisco de Souzaaguiar, of the Brazilian army, who is also a delegate to the World's Fair. The ground plan of the building is in the form of a Greek cross, the outside dimension being 148 by 148 feet. The

architecture of the building is French renaissance decorated with Indian figures in the bas-reliefs of the façade, and the stylobate of the dome. They are allegorical, and representative of the Republic of Brazil. The entire height of the building to the top of the dome is 120 feet. The columns and capitals are Corinthian. The entire roof except the dome is flat and surrounded by a balustrade. There are four campaniles, each with an open observation deck seventy feet above the ground. The interior is in perfect keeping with the exterior in all architectural fixtures. The cost of the building was $9,000. The Brazilian exhibits are scattered through the main buildings of the Fair, but the coffee, diamond and other industries are also represented here.

GUATEMALA BUILDING.

Eastward from Brazil is the Turkish Government Building, a unique structure which cannot fail to attract attention. It is a reproduction of a fountain in Constantinople, built two hundred years ago by Selim the Great. On three sides of the structure are marble basins into which flows water, while upon the fourth side is a beauti-

ful portal for entrance. Intricate carvings adorn the exterior walls, which are composed of mucharabia, a Turkish hard wood of great beauty. There are also alternate panels of inlaid wood and mother-of-pearl work, with here and there a text in Arabic characters taken from the Koran. The effect of this dazzling work is magnificent, and is enhanced by the gaudy uniforms of turbaned guards who night and day patrol the building. Glorious mosaic floors and draped and festooned hangings of rich fabrics make up the interior decorations, and everything is made more magnificent by the rich display of silks, costly jewelry and brilliant gems. There are also gums, gold and silverwares, daggers, soft fabrics and other oriental goods. Here may also be seen many curios from the Stamboul Museum and historic relics of the greatest value.

The Venezuela Building is next to the east. The graceful little structure, and the creditable exhibits of the country's resources, are highly commendable to the ambition and energy of this little republic when the recent troubles in the State are remembered, and the depleted condition of her treasury consequent thereon. The building is but one story in height, and is constructed in white marble in the Græco-Roman style of architecture. The graceful façade is ornamented with three handsome towers, on the left one of which stands a life-size statue of Columbus, and on the right one of Bolivar. Pre-historic relics, mineral and vegetable products, fine arts and manufactures are displayed. The flag carried by Pizarro during his conquest with Peru is shown, with many other historic curios.

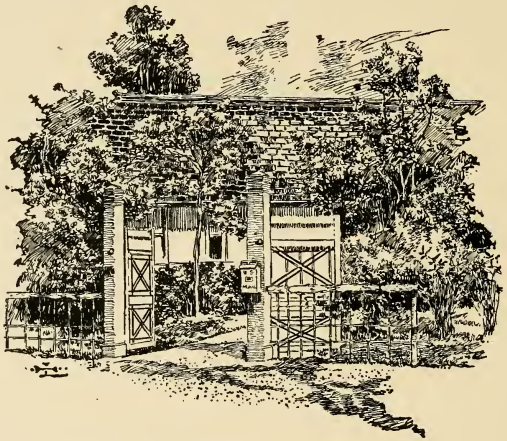
A large and pretentious building, erected at a cost of $40,000, is that of Sweden. It is in the form of a triangle, to fit the plot of ground assigned to it, and is strikingly peculiar. The corner spaces of the structure each form a separate room of considerable size, while galleries run around the main building. The hexangular main hall is sixty feet square, and over the cupola above has been constructed a steeple which reaches 150 feet into the air. The building was constructed in Sweden, where it was temporarily put together and afterwards taken to pieces and shipped here to be re-erected in Jackson Park. The design of the pavilion is the product

of the personal taste and fancy of the architect, Gustaf Wickman, of Stockholm, guided by the style of the Swedish churches and gentlemen's country houses of the sixteenth and seventeenth centuries, and as far as possible the characteristics of the old Swedish architecture have been retained. The material used, brick, terra cotta, cement and wood, was all donated from prominent manufactories in Sweden and forms a portion of the exhibit. Within the building are splendid exhibits of the iron mining industries of Sweden, as well as of other Swedish minerals. China goods and glass products, gold and silver work, wood pulp and paper are also shown in great variety. There is also an excellent representation of a genuine Swedish home, consisting of four rooms fully furnished and decorated according to the customs of the country. The sport exhibit includes specimens of all the various means of transportation used at different seasons and in different parts of the country, such as skates, snow shoes, skees, sleighs, canoes, yachts, etc. There are busts of many of the Swedish sovereigns, and exhibits illustrating the school system and gymnastics.

The East India Building stands between that of Sweden and Siam. It was not erected by the government, but private enterprise, and is most creditable to those who were active in the work. It is beautifully fitted up with the East Indian styles of ornamentation, and all sorts of Indian materials are sold within. There are two tea bars where tea is served to all visitors by Indian servants. The exterior of the building is in the East Indian style, modeled remotely after the fashion of the Taj Mahal. The building is one story high, with a gallery, and consists of but one open room, lighted from a central skylight. It is 80 by 60 feet, and its main entrance is through a gateway surmounted by minarets. It is decorated with oriental colors.

Just back of this building stands the last of all the foreign structures of this character, the building of Colombia. This ornate little building is in the style of the Italian renaissance and measures forty-five feet square. On each side are conservatories filled with rare tropical plants which give it the appearance of much greater dimension. The first story is occupied by a remarkable and very

valuable collection of antiquities exhumed from pre-historic graves in Colombia, comprising water-bottles, human images, helmets, trumpets, breastplates, necklaces, bangles, anklets, etc., all of pure gold. There are also mummies and a large collection of ancient pottery. The building is surmounted by a glass dome above which is perched a condor, the emblematic bird of Colombia. On each side of this dome a group of three figures supports a globe and flagstaff bearing the national colors, yellow, blue and red. There are other symbolical and interesting decorations, and the little building is also favored by many visitors.



JAPANESE GATEWAY.

This exhausts the list of foreign buildings properly included in the exhibits departments, or of official standing. In addition, however, in the same vicinity as these we have named, are a Polish cafè, a Japanese tea-house, and a Swedish restaurant, and a Cafè de Marine, which is under French control. In these restaurants visitors from foreign countries may be served their native dishes by native waiters, and curious Americans can learn much of the customs of other countries. The Japanese tea-house has been a favorite resort, throughout the Fair. The tea served is of excellent quality, and as one sips it from dainty Japanese ware, surrounded

by natives of the Flowery Isle, it requires no great flight of the imagination to carry one thousands of miles from Chicago.

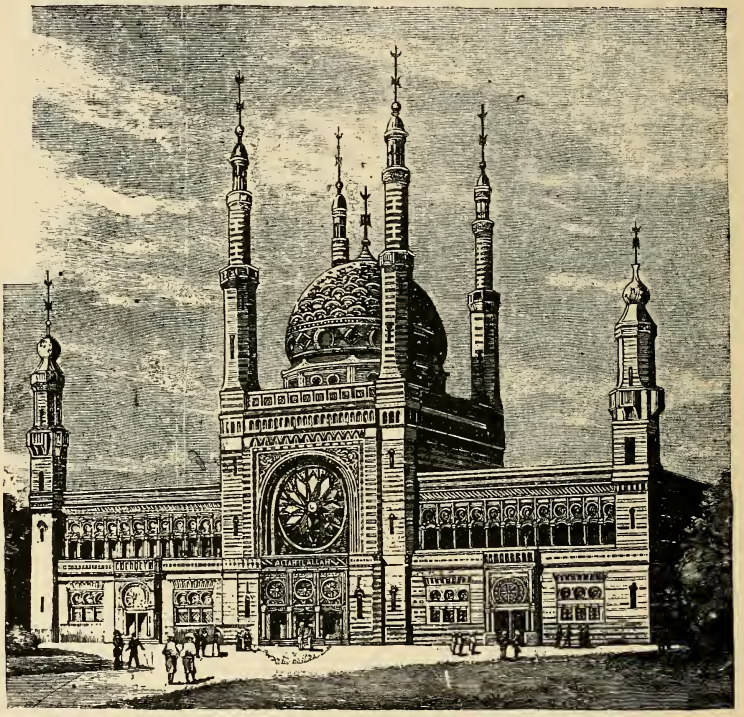
This brief account will be sufficient to show that the curious visitor may enjoy many of the pleasures of a tour around the world within the few hundred yards covered by the Foreign Buildings of the World's Columbian Exposition.

560 TYPICAL SCENE IN THE PLAISANCE.—FERRIS WHEEL IN THE DISTANCE, DURING CONSTRUCTION.

Midway Plaisance

THE feature of the Exposition which has been the subject of more levity and more irreverent remarks than any other, and is yet one of the worthiest of all the features of the Fair, is the Midway Plaisance. Sometimes it is called the "church fair annex," and sometimes the "side show," but in truth it includes a maze of exhibits of the most interesting character, although private so far as their relation to the Exposition is concerned, and which would never have been heard of in this connection had it not been made possible to interest private capital in them. Midway Plaisance is a strip of land 600 feet wide and a mile in length, which connects Jackson Park with Washington Park. It extends from 59th to 60th street, and beginning at a point directly back of the Woman's Building, reaches at right angles a mile west of the city. Through the centre of this narrow Park-way is a street 100 feet wide, and this is lined on both sides with so remarkable a collection of shows of one sort or another that one man could never hope to find them all in a lifetime were he compelled to search through the world for them himself. This is the main avenue to this place of wonders. It is a mixture of all foreign lands under the sun which it has been thought might interest us. Even to catalogue its wonders with any degree of completion would require a volume.

First, it may be said that there are no small things, no unimportant things, nothing cheap in the whole exhibit. The feature of greatest interest to most visitors is the conglomeration of foreign people. Those of each race live in a village of their own, built



MOORISH PALACE.

according to plans made by native architects, and arranged in every way according to their customs in their native lands. All of these institutions cost from $50,000 to $250,000 each. On the north side of the Park-way, in the exact corner of the Plaisance, is a fire and guard station, which protects the interests of this Congress of Na-

tions from damage by fire. Just to the south of it is a pretty little booth of the Diamond Match Company, which here displays its wares, the materials from which they are made, and the processes by which the raw material is converted into the finished product.

ELECTRIC SCENIC THEATRE.

Just to the west is a Workingman's Home, built on the Philadelphia model, to show what can be done with a small amount of money. It measures 16 by 43 feet, and is plain and unpretentious, with a front of Bedford rock and pressed brick. It is a pleasant little home, and worthy of the attention it attracts.

On the first floor are a parlor, eighteen feet seven inches by nine feet one inch; a dining room, ten feet one inch by twelve feet two inches; and a kitchen, nine feet six inches by seven feet four inches. The hall-way is five feet wide, and a narrow staircase leads to the

second story, which has a front bedroom, fourteen feet three inches by eleven feet ten inches, with walnut mantel and corniced ceiling. A second bedroom is eleven feet one inch by nine feet one inch; and next is a bathroom six feet square. A back sitting-room has an overhanging bay window four feet deep. There is a basement the full length of the house and the total cost is $2,500. On the placard which guides the visitor to this house he is told that in Philadelphia are one hundred and seventy-two thousand of these. It is a cozy and comfortable home, and may be duplicated many times by those who see it here.

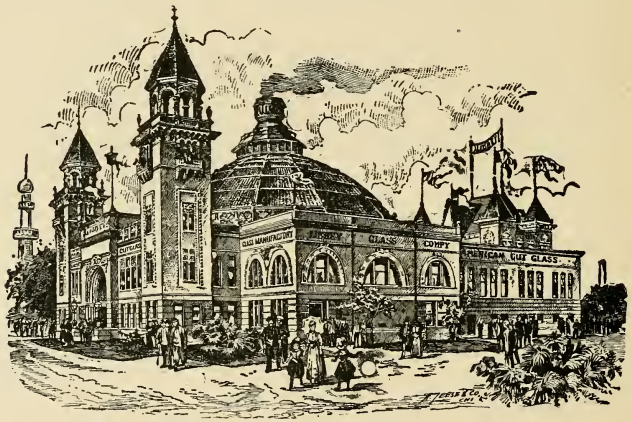
Next to the westward is a considerable enterprise, the exhibit of the International Dress and Costume Company. There are some forty-five women here displayed, with a variety of form, face and costume, selected from many countries of the world. It is interesting, as showing varied types of beauty, and the dress of different countries.

The managers of this company journeyed all over the world to select those who should be here exhibited, and they claim that the young women represent the most beautiful types of each race and nationality. There are representatives from England, Scotland, Ireland, Wales, Norway, Sweden, Denmark, Russia, Poland, Germany, Holland, Belgium, France, Switzerland, Austria, Hungary, Turkey, Greece, Bulgaria, Servia, Italy, Spain and Portugal in Europe; from Algiers, Tunis, Tripoli, Morocco, Egypt and Cape Colony in Africa; from Palestine, Persia, India, Siam, Burmah, China and Japan in Asia, besides those from America, South America and Australia, and the Islands of the Pacific. There is a constant throng of visitors in attendance here, and it is considered to be one of the most profitable of all the enterprises on the Plaisance. The space between this building and the Illinois Central Railroad, which here crosses the Plaisance, is occupied by a Nursery Exhibit.

Passing under the railway viaduct the visitor reaches the Electric Scenic Theatre. It consists of a display of scenery shown by the latest methods of effects by electricity. The scenery was executed in Germany, and is considered a triumph of art. It represents "A Day in the Alps," and is a great entertainment to many people.

Oriental
Poland
Sweden
Tyrol
England

"The Day in the Alps" begins with sunrise, and over the mountain top appears the ruddy glow of early sunlight. Then, as morning advances, and the volume of light increases, the beauties of the mountain become more apparent until their full glory flashes upon the beholder. The shepherd boys and girls are seen with their herds, and every feature of Alpine life is faithfully portrayed. Then a storm arises, and the effects here produced by electricity are surprisingly beautiful. After the storm dies away and the clouds vanish Nature smiles again. Then the day begins to fade, and at last it is night, with the stars brooding over all.

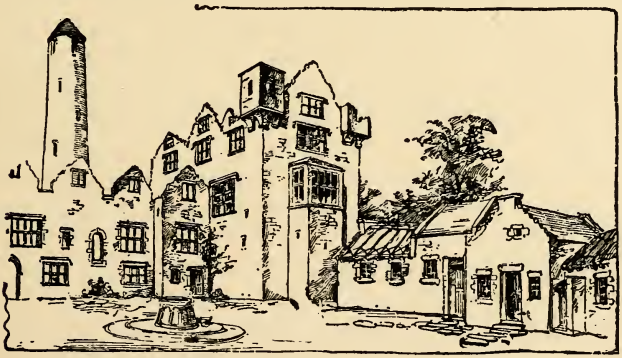


LIBBEY GLASS WORKS.

Next to the westward, the Libbey Glass Company of Toledo, Ohio, has erected a completely equipped manufactory of cut glass. In a handsome building the many processes of glass-making are displayed, from the mixing of the sand with oxide of lead, lime and alkalis to the latest and most approved methods of cutting, polishing and finishing. In the glass-blowing department skilled workmen make souvenirs of the fragile ware. In the glass-cutting department forty men are continuously engaged in cutting upon crystal the most delicate and intricate patterns. Still another department is that where facile artisans are employed in painting upon

glass, which is afterward transferred to kilns and fired to fix the designs indelibly. Glass spinning and glass weaving are likewise exhibited here. The wheels used for spinning are six feet in diameter, and draw out threads of glass almost as thin as gossamer, which are then woven into beautiful fabrics for dresses, napkins, lamp shades, bonnets, etc. Among other things, a dress was manufactured here for the Infanta Eulalia, of Spain, which was a triumph of art. Goods of the highest American standard, and of every grade and kind, are here made, and the building is ample to accommodate five thousand visitors at one time.

The Irish Village adjoins this on the west, and attracts constant attention. As the visitor passes down the Midway Plaisance he sees the gray towers of a mediæval gateway, a faithful reproduction of the St. Lawrence gate, of Drogheda, which was built in the year 1200. This is now the picturesque approach to a pleasant street illustrative of Irish industrial life in the country districts. At the end of the street, immediately facing the gate, are the beautiful



DONEGAL CASTLE.

ruins and banqueting hall of Donegal Castle, beyond which is seen the tall, round tower of Antrim, and a fine carved Celtic market cross. The interiors as well as the exteriors of the houses are reproductions of those of Irish cottages, and the workers are genuine Celts brought from Ireland for the purpose. Lace weavers and

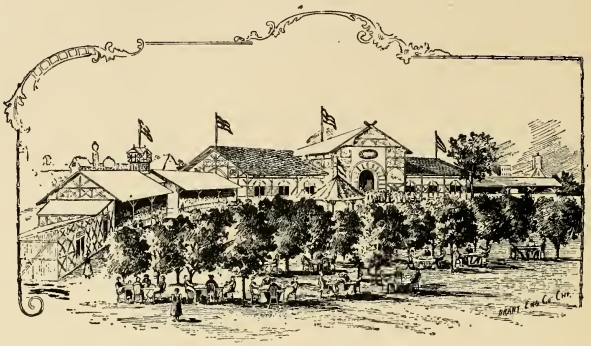
makers of hand lace are seen, as well as linen weavers, wood carvers and marble carvers. There are many beautiful Irish products, paintings, illuminations, tapestry, and other work. In the first cottage on the left a man is seen weaving the famous "Kells Art Linen." They were introduced by Mrs. Hart, and were awarded the gold medal at the Inventions Exhibition in London in 1885. A girl in the same cottage is embroidering linens in polished flax threads from designs adapted from ancient Celtic manuscripts of the seventh century, specimens of which are seen in the banqueting hall. In the next cottage are two women employed in lace-making, one a very skilful worker, making Limerick lace in a tambour frame, and the other making Kells lace on a pillow. In the third cottage is found work of another description, viz.: wood-carving and drawing designs for the marble carvers, who are found at the end of the courtyard. Passing into the banqueting hall of Donegal Castle, built from measurements of the original, the ancient seat of the O'Donnells, princes of Tyrconnell, are found embroidered hangings and coverlets, and unequalled homespuns, spun, woven and plant dyed by peasants trained in the most remote districts in County Donegal. There are also iridescent and colored linen, Irish and Kells laces, daintily stitched and embroidered ladies' underwear and dresses, among which are replicas of articles made by order of the Princess of Wales for the trousseau of the Duchess of Fife, ecclesiastical vestments, wood-carvings, hammered iron, hosiery, handkerchiefs and house linen, all the work of Irish hands. Besides these there is a fine collection of Irish marble, bog-oak carvings, jewelry, blackthorn sticks, photographs of scenery, etc. Among the art works is the great statue of Mr. Gladstone, by Bruce Joy, the Irish sculptor, who also shows replicas of his Manchester statue of John Bright, and of his charming bust of Mary Anderson. Here also is a gallery of portraits of great Irishmen taken from engravings in the British Museum, paintings by Irish artists and of Irish scenery and history, replicas of the old Celtic illuminations, engravings of the Irish carved crosses and reproductions of ancient Celtic metal work and jewelry. The picture by Begg of "Gladstone Bringing in the Home Rule Bill" is a

fine work of art which appeals to all Irishmen. The exhibition is illustrative of Irish art of the earliest to the present time, and is such as has never before been seen in this country. The courtyard, which is reached through the concert and lecture hall, is one of great interest to the student of Irish history and art. In the centre is a round tower rising to the height of 120 feet, which is a replica of one of the eighty still standing in Ireland. In the courtyard of the tower are found faithful reproductions of Ogham, Bullen and Hole stones of cromlechs and crosses. Chief among the latter is a cross twenty-seven feet high, splendidly carved in interlaced Celtic design and made of Irish limestone. The size and proportions are exactly the same as those of the great cross of Monasterboice. At the end of the courtyard stands a portion of the "Wishing Chair" of the Giant's Causeway. It stands on real Irish soil, and is a favorite spot of every true Irishman. Passing through the archway of the ruined keep of Donegal Castle, one reaches the village smithy, where the blacksmith is making souvenirs out of iron. In the next cottage is seen the whole process of homespun making as taught and carried out under the auspices of the Donegal Industrial Fund. This village, with its street of cottages, its castle, Roman tower, art and industrial exhibition, was designed and carried out by Mrs. Ernest Hart.

Next to the westward is a Japanese Bazaar, where are shown the characteristic exhibits of this ingenious and artistic people, consisting of screens, fans, lacquer wares, steel, iron and brass work, all for sale.

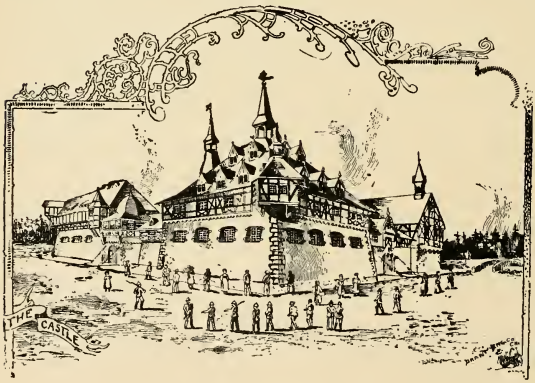
The village known as the Dutch Settlement, which is the next one to the west, occupying a large area, is really a collection of South Sea Island villages, mostly Javanese. It occupies a space of 200,000 square feet on both sides of the main avenue of the Plaisance. There are eighty dwellings, peopled with three hundred natives from Java, Sumatra, Borneo, Samoa, Fiji, New Zealand and the Sandwich group. There are two theatres in the settlement, one erected by the Hawaiians, and the other by the Javanese, who largely outnumber the other nationalities. There are dancing girls, jugglers, medicine men and acrobats, all of whom give wonderful

and interesting exhibitions. The Javanese are dainty and attractive little people, and are very generally admired. A large café in this



CORNER OF GERMAN VILLAGE.

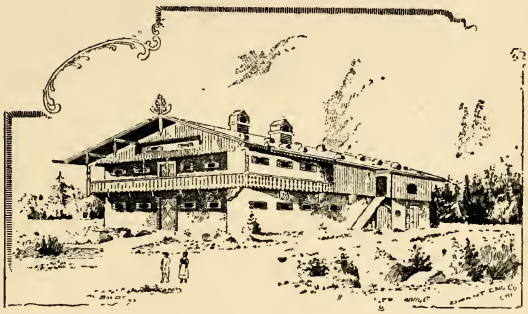
village, built after the fashion of Dutch dwelling-houses in these islands, is a resort where all sorts of native foods are served. At the Javanese Theatre is a gamelung, or band, which belongs to the Sultan of Jokjerkata, as do also the dancing girls who accompany it. These dancing girls are young, lithe, beautifully formed and extremely graceful. Their dancing is an hereditary talent derived from long lines of dancing ancestors, for there is a caste in this island devoted to this occupation. Their brilliant red ballet skirts are semi-transparent, and are made



EAST SIDE OF THE CASTLE.

of the fibres of a certain kind of tree bark. The Singalese, Malays and other South Sea nations also have their jugglers, medicine men, acrobats and dancers, who give exhibitions of their skill, and some of their performances are wonderful and pleasing.

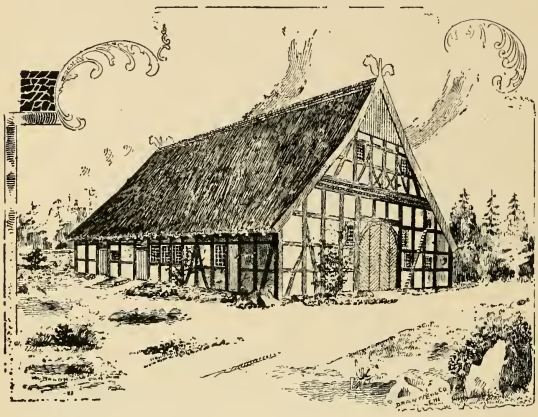
The German Village, which adjoins the Javanese settlement on the west, occupies the largest space of any in the Plaisance. The buildings are constructed most substantially of German material, by German workmen and in German fashion. The village is a true representation of German life in all its aspects, social, domestic and industrial, as well as an illustration of the development of the nation. It is divided into three distinct parts. The most prominent structure is the mediæval castle of the sixteenth century, surrounded by a moat fifteen feet wide and crossed by two drawbridges. The spacious halls in the east half of this castle are filled to their utmost capacity with an exceedingly interesting ethnographic museum, comprising, among other features, the celebrated collection of arms, coats of mail, implements of the war and the chase, the property of Town Councillor Zschille, of Grossenhain, Saxony. This collection alone has a value of $1,000,000. There are other interesting collections, and representations of all sorts of German homes.



BAVARIAN HOUSE.

Bernhard Mannfeld, one of the leading representatives of the art of etching, exhibits here hundreds of his own works in the various stages of development. In the main hall of the castle an apotheosis of the German empire is shown in the form of a group of the most famous heroes of the German nation down to William I., and this group is surrounded by a procession of German

peasants from all sections of the empire in their respective national costumes doing homage. The ethnographic collection is so extensive that another building was required for it, and the Hessian town hall had to be given up to it also. In the shadow of the castle, to the east of this, is spread out the village proper, consisting of German typical farm houses from all sections of the empire, with a Fair in progress in the streets. Articles of German industry, many of them produced on the grounds, are sold to the visitors by natives in their national costumes. Passing from the village in front of the castle, and to the west side, one reaches the grand concert garden where two German military bands, in the most picturesque uniforms of the German army, give two concerts every day. This garden, which is covered by splendid oak trees and surrounded by covered pavilions, accommodates eight thousand people at one time.

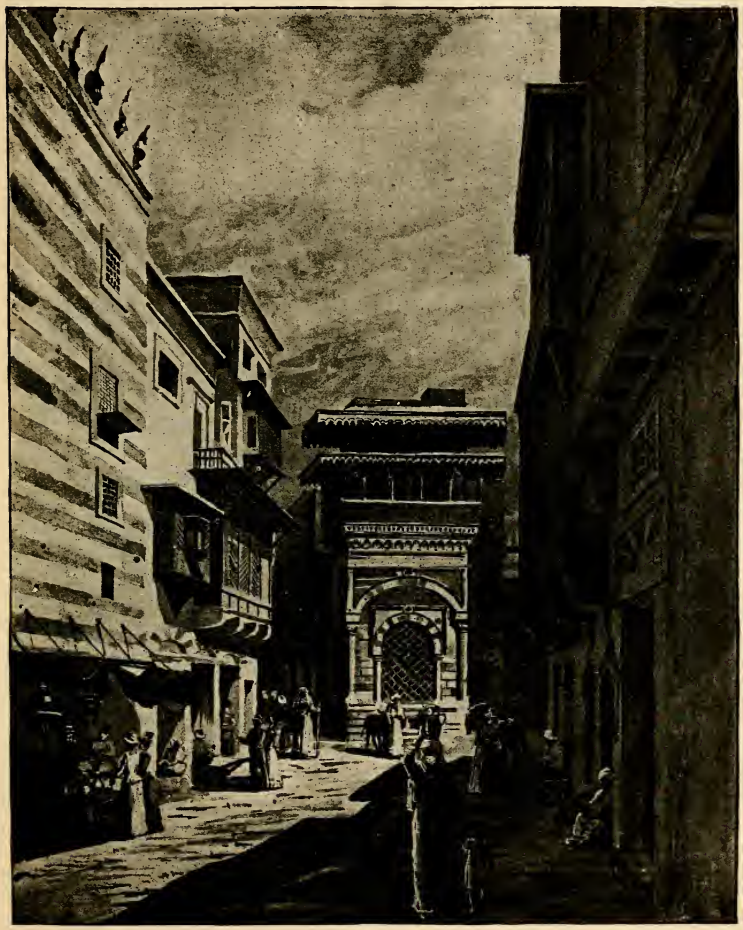


WESTPHALIAN FARM HOUSE.

BLACK FOREST HOUSE.

The street in Cairo, which had won fame before the Exposition was a week old, comes next to the west. It presents to the visitor a series of views in the wonderful land of Egypt. In addition to the oriental nature of its architecture and decorations,

the resemblance is carried still further by peopling the streets with



STREET IN CAIRO.

the identical types of persons and animals one sees in the real Cairo. There are Egyptians, Arabs, Soudanese and other Africans,

besides camels and donkeys with their drivers. There are private houses and stores; an Egyptian theatre, and a mosque. In the marts of the street are to be found oriental wares of every kind, jewels, daggers, wood carvings, embroideries, silks, shawls, bangles and pipes, and everything else found in the bazaars of the far east. In the theatre the dancing girls exhibit the famous "danse du ventre."

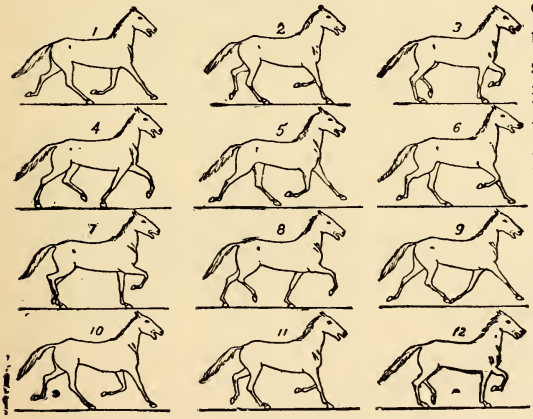
Entering at the eastern portal one obtains a view of houses, mosques and booths similar to those in the old street "Bein el Kasrein." The first typical building to the right is a wide hall with deep projecting roof and five fine archways to the street, here used as a café. Looking on beyond the vista presents houses decorated with gorgeous colors and constructed with projecting bays, stone brackets and overhanging second stories. To the left is a fine mosque with tall, graceful minarets girdled with three airy balconies, from the uppermost of which the muezzin calls the faithful to prayer. Both mosque and minaret are reproductions of fifteenth century architecture. Across the street from this building is one representing the dwelling of a wealthy merchant of the seventeenth century; its interior walls are decorated with marble mosaics and its ceilings richly gilded. Still farther on, standing to the left of the street, is a faithful reproduction of the "Okala," the public warehouse before the advent of railroads and steamers. The theatre is next in order. Its interior is richly decorated with fine cloth hangings and pendent lanterns and its aspect is decidedly oriental. The café, where fragrant Mocha coffee is to be had, is beautifully built in reproduction of a small mosque. Upon the plaza are Egyptians, Arabs, and persons of other nationalities who throng the streets of the wondrous city.

Three smaller concessions lie just to the south of the Egyptian village. The first is the Zoopraxiscopic exhibit and lecture room, which is of vast interest to artists and scientists. Animal locomotion is a new study, pursued chiefly by electro-photographic investigation. Instantaneous photographs, taken with the aid of the electric shutter, show all preconceived opinions as to the method of representing animals in action to be utterly false. Here lectures

on animal locomotion are given, and by an ingenious apparatus there is an exhibit of illustrations of the movements of men, women and children, and many sorts of animals. The investigations which have resulted in this excellent display are those of Eadweard Muybridge, of the University of Pennsylvania.

ZOOPRAXOGRAPHICAL HALL.

Adjoining this building is the pavilion of the Turkish concession, where Persian rugs, Damascened scimiters, curious daggers, and other famous wares are on sale. A miniature reproduction of the great Eiffel tower, of Paris, is shown in a building in the same vicinity. It is a perfect reproduction, one-fiftieth the size of the original, and it is illuminated and decorated beautifully.



SOME CONSECUTIVE PHASES OF THE RACK OR PACE.
The stride is completed at 10, and 11 and 12 are reproductions of 2 and 3.

The visitor has now reached the Ferris wheel, the most notable of all the concessions, and even of all the exhibits at tne Fair. It stands in the centre of the walk, midway of the Plaisance, and towers two hundred and

sixty-four feet into the air. It consists of two skeleton wheels, twenty-eight and one-half feet apart, and held together by strong steel shafts. Between the outer rims of these wheels are suspended

THE FERRIS WHEEL.

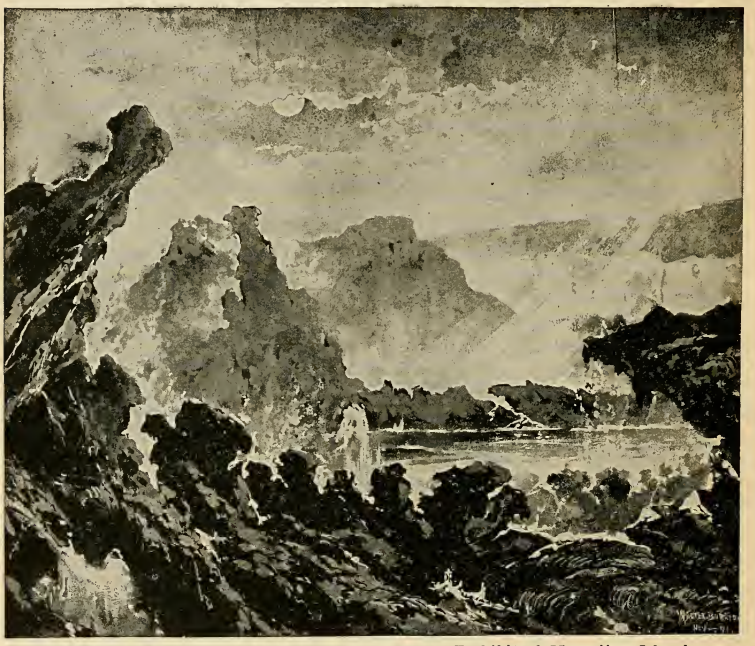
thirty-six passenger coaches, balanced upon great steel pivots. These coaches accommodate sixty passengers each, or a total of twenty-one hundred and sixty. The two steel towers upon which the axle rests and revolves are 137 feet high, five feet square at the

top, and 40 by 50 feet at the bottom. The axle is the largest steel forging ever made, being thirty-three inches in diameter, forty-five and one-sixth feet long, and weighing fifty-six tons. Six cars can be loaded or unloaded at the same time. The time required for a round trip is about twenty minutes. The motors which revolve the wheel are two engines of two thousand horse-power.

The village of Algeria and Tunis, next to the west of the Cairo street, occupies an area 165 by 280 feet. In addition to a large concert hall, it consists of a Moorish café, Kabyle house, an Arab tent village, desert tents, etc. The main building has a Moorish dome, towers and minarets, and its exterior is covered with richly colored and glazed tiles. Palms and fountains add an oriental air to the scene. Connected with the theatre are fifty people, including the native musicians, jugglers and dancing girls. An Indian bazaar adjoins this village, where the natives of the orient

ALGERIAN MUSICIAN.

show and sell their unique and characteristic wares. The L-shaped building in the centre shows a street in Algiers, and that immediately to its right a Tunisian street. Next to the concert hall, half hidden by the café, is one of the curious Kabyle Arab houses. The Arab Kabyles and negroes are seen about their daily labors and amusements, while palms and fountains add an oriental air to the scene.



PANORAMIC PAINTING OF KILAUEA VOLCANO. *Exhibit of Hawaiian Islands.*

The volcano of Kilauea, that great one of the Hawaiian Islands, is shown in a cyclorama west of the Algerian Village. It is an immense painting, depicting the weird sublimity of the "Inferno of the Pacific." Over the entrance portal of the building stands the figure of the goddess of fire of Hawaii, Pele. The building which houses this panorama is polygonal in shape, one hundred and forty feet in diameter and sixty feet high. Around its walls hangs a canvas fifty-four

feet high and four hundred and twelve feet long, upon whose surface the artist has depicted this world's greatest volcano. The actual crater is a huge depression or pit about three miles long and two broad. The walls are mostly precipitous though quite irregular, and the floor is some three hundred feet below the surface of the island at that point. In the reproduction, the point of view selected for the visitor is the centre of the crater. To this point he is transported for the time being, and upward and around him he gazes upon bubbling and seething pools and lakes of fire, toppling masses of rocks and outpourings of lava. Fathomless pits yawn below him, huge puffs of smoke arise from the earth, and from innumerable rents and fissures in the ragged edges of the crater fierce flames and sulphurous gases escape, intermingled with the long glassy thread which the natives call "Pele's Hair," after the dread goddess of the crater. At one point he beholds an inky lake of molten lava slowly pulsing and throbbing, through whose waves burst forth jets of many-colored flame. Beyond this he looks down into a perfect sea of fire, and the sight is absolutely indescribable. Of all this the cyclorama gives a vivid representation, with its built-up foreground, which blends imperceptibly into the painting on the canvas, aided by skilful pyrotechnic displays, colored electric light and other mechanical means. Thus one has in miniature every feature of this grand crater, whose circumference is more than nine miles. It is the only volcano whose terrific fires never die out and which is ceaseless in its awful activity. In the background one sees the snow-capped peaks of Mauna Loa and Mauna Kea, each of which is about 15,000 feet high. Opposite them is the mighty Pacific, its waves lighted by a full moon, and its surface glittering like silver. Over the entrance portal of the building stands the figure of Pele, the Hawaiian goddess of fire. It is built of wood, covered with staff to represent stone, and is the work of Mrs. Ellen Rankin Copp, of Chicago. The post of this awful divinity was suggested by an island legend which tells of a race between the goddess and a native prince. Winning at the first trial, he taunted her to try again, and looking back beheld her seated on a wave of molten lava in fierce pursuit, her hands bear-

ing firebrands which she hurls after him as he takes refuge in the sea.

The Chinese Village and Theatre consist of a theatre, joss-house, bazaar, restaurant and tea garden. The best dramatic talent and richest costumes have been secured direct from China for the theatre, while the joss-house is equipped with the burning candles, fragrant incense, and grotesque idols which belong to Chinese theology. There is a tea garden showing a fine collection, some priced at $100 a pound, and requiring but a few leaves to make a full pot of tea. The restaurant here is conducted upon both the American and Mongolian plans, and fried chicken and ham sandwiches may alternate with Chinese fruits, preserves, sharks' fins, birds-nest soup and similar delicacies. The bazaar has a fine collection of rich silks and embroideries, elaborately decorated table and toilet wares and other curiosities.

CORONADO OSTRICH.

The Captive Balloon Park is next to the west. It is handsomely

NATIVES IN DAHOMEY VILLAGE.

fitted up and equipped to send large numbers of people a thousand feet into the air, in the great air ship which it contains. After a few weeks of prosperity the air ship was wrecked in a storm, and for a time could not be used, but the park which contained it was fitted up for refreshments and concerts, and became a favorite resort.

The last attraction of this character to the west is the Ostrich Farm. Here a herd of those immense birds is shown, with their eggs, their nests, and other features of interest connected with their rearing. There are incubators in operation hatching out ostriches, and at stated times the birds are plucked, and their magnificent plumes sold to visitors. The birds are exceedingly interesting, and never fail to attract attention.

It shares the east and west space with a Brazilian music hall, and an exhibit of the Blue Grotto of Capri. The latter is contained in a rough rock mass, 175 feet long, 100 feet wide, and 150 feet high. The scene is beautiful, and cannot fail to be interesting to all. It is a remarkably exact reproduction, on a smaller scale, of the original cavern on that Italian island.

On entering the mass through a jagged rent in its side a scene is presented at once novel and beautiful. A lovely grotto with a pool of crystal water in its centre charms the spectator by the intensity of its deep blue tint. This water is kept in continual agitation by mechanical means, and thus resembles the waves and the ebb and flow of the indashing sea. Around the pool is a smooth, pebbly beach, circling which are ornamental cases containing shells, corals, cameos, breast-pins, fruits and other productions of the island. Historical relics, photographs and other pictures are also exhibited. From this point to the western extremity of the Plaisance a military encampment occupies its whole width.

The first exhibit on the south side of the Plaisance, as the visitor returns eastward toward Jackson Park, is the National Hungarian Orpheum. The exhibit consists of a café and concert pavilion, and a roof garden. Concerts are given every half hour, the performers being Hungarians direct from Buda-Pesth. The native costumes and modes of life of the different nationalities which compose this

empire are shown. The various songs and picturesque dances are rendered. The waitresses in the café are Hungarian maidens, dressed in rich national costumes, and there is also a gypsy band.

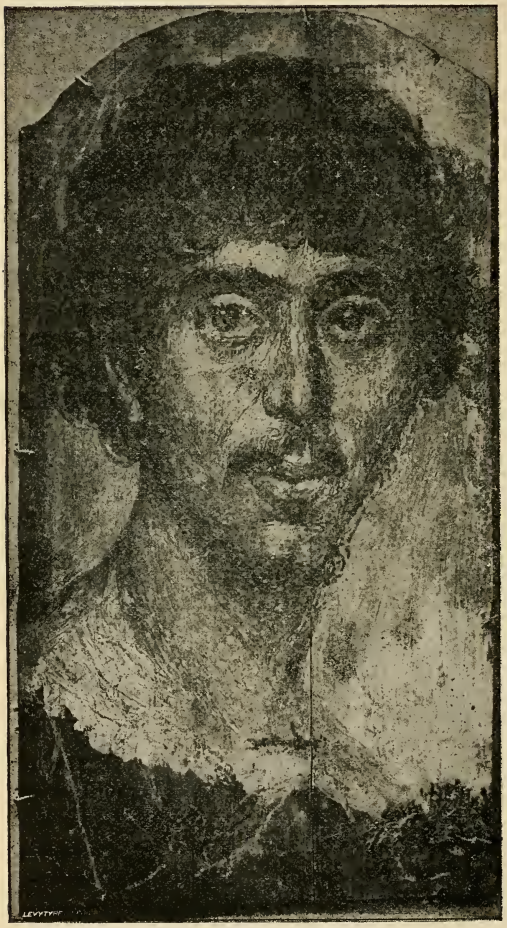
Adjoining this display is the Lapland Village, in which may be seen thirty-seven native Laplanders. Among the women are artists, musicians and hair-workers. Reindeer and sledges are shown, and the peculiar costumes and curios of this far northern nation.

The most exclusive and independent of all the exhibits on the Plaisance is the Dahomey Village, next to the east. It consists of three houses, one of which is fitted up for a museum, and a group of huts for the women, and others for the men. In addition there are four open sheds used for cooking. The rustic front of the exhibit is constructed of wood brought from Dahomey, and on platforms on each side of the gates are seated two sentinel warriors of that country attired in their native costume. There are forty women and sixty men in the village. The various dances and other ceremonials peculiar to these people are exhibited, and their songs, chants and war cry are given. They also sell unique products of their mechanical skill, such as quaint hand-carved objects, domestic and warlike utensils, etc. During the later months of the Fair it was found necessary by the management of this enterprise to place a strange placard just outside the entrance. It was a request to all visitors that they refrain from questioning the natives of the village in regard to the past cannibal habits of themselves and their ancestors, as it was very annoying to them.

The Austrian Village, or street in old Vienna, occupies a large space next to the east. It is a reproduction of "Der Graben," a portion of Vienna as it existed about one hundred and fifty years ago. Its space measures 195 by 590 feet, the greater part of which is a court or plaza around which the buildings circle. There are thirty-six buildings in all, by far the largest of which is the city-hall. There is also a church and thirty-four shops and dwelling-houses. One of the buildings is fitted up as a grand restaurant, and there are more than five hundred Austrians employed in the village.

In these shops are sold all sorts of Viennese wares of the present

and early days. One of the buildings is fitted up with a grand restaurant, with seats for one thousand people. Here fifty or more young women from Vienna serve all sorts of delicacies from a Viennese bill-of-fare. Within this village is a branch of the Imperial Royal Bank of Austria. It is a practical working exhibit, showing the processes of banking affairs in the Austrian empire. In the Austrian Village is preserved a magnificent collection of old Greek portraits, of great antiquity, and valued at many hundred thousand dollars. The collection is the rarest of the kind that exists, and is worthy of the great attention it excites. The picture reproduced here is one of the gems of the lot.



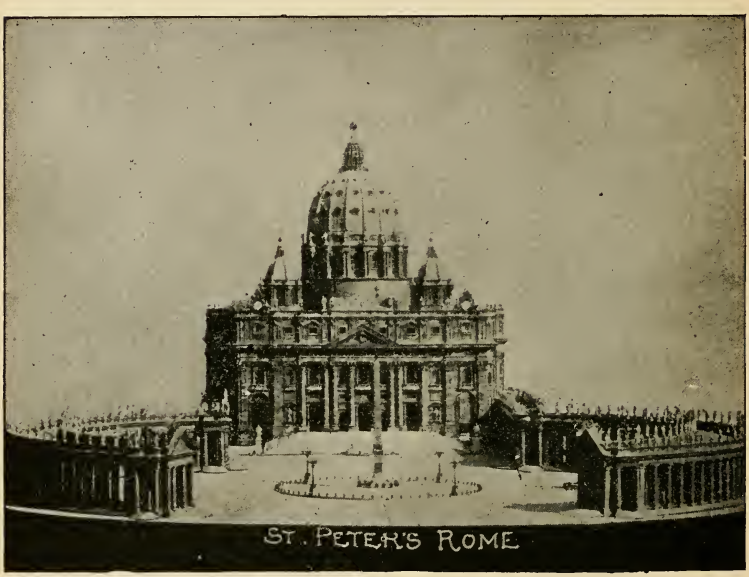
OLD GREEK PORTRAIT.

Occupying small spaces just to the east of Old Vienna are a French cider press, a model of St. Peter's

STREET IN OLD VIENNA.

Cathedral at Rome, and a Vienna café. The French Cider Press is an open pavilion where cider is made from apples in a typical French press, by French peasants, and served to visitors by French country maidens in Normandy dresses.

Just to the northward is the Vienna Café, a very ornamental



MODEL OF ST. PETER'S.

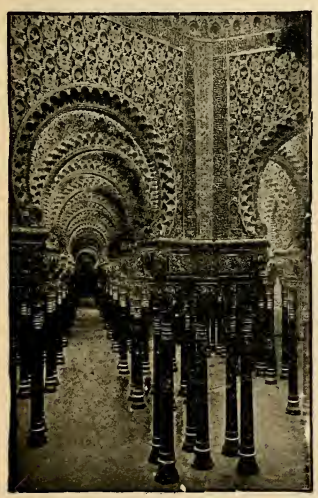
structure, the lower floor of which is devoted to regular meals and the upper to cold lunches and wine and beer tables. The rooms are decorated with Japanese screens, and a fine orchestra is employed.

East of and adjoining these exhibits is the model of St. Peter's Cathedral at Rome. This wonderful masterpiece of workmanship represents in its minutest details and upon an exact scale the original structure, which is the most magnificent edifice in the world. This model was begun in the sixteenth century from the original plans and drawings of the famous artists and architects who had

designed the original. It is of carved wood, coated with a substance which perfectly imitates marble, and reproducing the exact

ICE RAILWAY.

color of the original structure. It is undoubtedly one of the most extraordinary pieces of workmanship ever executed. The minutest details of the bas-relief of the façade, the stucco, statues and inscrip-



INTERIOR OF MOORISH PALACE.

tions are faithfully reproduced to scale. The model measures about thirty feet in length by fifteen feet in width and fifteen in

THE MOORISH PALACE—IN THE GARDEN.

height. The interior of the building in which it is exhibited also

THE MOORISH PALACE—DANCING GIRLS IN THE HAREM.

includes an array of relics and portraits, and some other models.

The persons in attendance here are dressed in the exact uniforms of the Papal Guard and armed accordingly.

Just to the south of these exhibits is the Ice Railway, an exhibit partaking of the nature of a skating rink and a toboggan slide. The surface is kept continually coated with a layer of ice by means of ice-making machinery, and on a circular track long sleds carry their loads of passengers at a great speed.

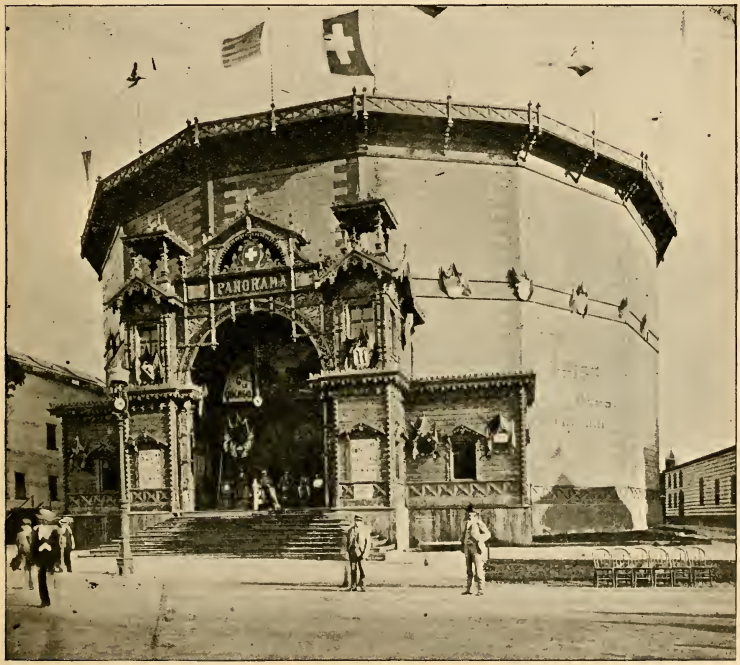
A glass-spinning exhibit in this neighborhood shows all the curious processes of spinning this fragile material into fabrics which will bear considerable rough handling.

The visitor now reaches the Moorish Palace. This building is a fine one, in the elaborate style of Moorish architecture, surmounted by an airy dome; and the slender pillars of its interior, with their graceful stems and richly carved capitals, vastly multiplied in number by an ingenious arrangement of mirrors, suggest that marvel of Moorish art, the Alhambra. The walls and ceilings are decorated with fine paintings. Grottos and fountains illuminated by colored electric lights abound, and Arab attendants in native costumes wait upon the visitors. Objects of art and various curios are sold in the bazaar. One of the most curious exhibits is the "Fountain of Youth," representing aged females entering the water, and emerging from it ravishingly beautiful and returned to their teens. This is a practical representation of the idle myth so long sought for by the early Spanish explorers.

Across a street to the east one reaches a kindred structure, the Turkish Village. It consists of a street in imitation of one of the old streets in Constantinople. A pavilion, said to represent the Bagdad kiosk, is a fine specimen of early Turkish architecture. An immense tent, formerly belonging to the Shah of Persia, and a silver bed weighing two tons, and once the property of a Turkish Sultan, are among the curiosities shown. There are about two hundred natives in this village, including a priest who looks after their spiritual welfare.

A Panorama of the Barnese Alps, the work of three noted Swiss artists, attracts many visitors to this vicinity. This panorama is sixty-five feet high and over five hundred feet long. All the charac-

teristics of an Alpine tableau stretch before one, and so perfect is the representation that it is difficult to believe these mountains are but creations of the painter's art. Along the horizon are seen sparkling glaciers, great fields of snow, rugged moss-covered rocks jutting out into the air, pastures dotted with Swiss chalets, herds



PANORAMA OF BERNESE ALPS.

of cows and goats peacefully grazing in the deep valleys; in short everything that makes Alpine scenery fascinating, beautiful and grand. The space assigned for a Natatorium next eastward is, during the latter months of the Fair, given over to an American variety show. For a time a pugilist, who held the temporary title of champion, was the star attraction at this place. This fact is men-

tioned simply to show what contrasts and variety could be found within the limits of the Plaisance.

Passing here the portion of the South Sea Island Village, which extends this side of the Plaisance, the visitor next reaches the Hagenbeck Trained Animal show. For this a large and beautiful building was erected, which houses the great menagerie, and in its centre is an arena surrounded by an auditorium with a capacity of 4,500 seats. The collection of animals is one of the finest in the world, and the feats which they are trained to perform are truly marvellous. In the last part of the performance a group of twenty animals, including lions, tigers, leopards, bears and dogs, are brought into the ring at the same time, made to take their appointed seats with becoming gravity, and afterward put through different performances, one by one and in groups. Other features of these performances are the trained lion on horseback, and the trained pigs, which perform remarkably clever evolutions. Carl Hagenbeck is renowned the world over as the most successful of animal trainers, and also as the largest dealer in wild animals. From his collections have been supplied practically all the zoölogical gardens of the world. In the menagerie here there are twenty lions, two Bengal

DRIVE OF THE LION PRINCE.

tigers, one Polar bear, two black bears, a collection of the finest boar hounds ever brought to this country, beside a large number of young panthers, leopards, tigers, monkeys and parrots. There is also a very creditable ethnological exhibit, comprising New Caledonia, British Columbia, the South Sea Islands, Africa and the Indies, and contain a vast number of implements, hunting trophies, skins, etc. There is also an aquarium representing in miniature an imitation of the Indian Ocean, with wonderful plants and fishes in their proper places.

The exhibit of the Venice-Murano Glass Co. is contained in a building in the Italian Gothic style, richly decorated with glass enamel, and surmounted by the winged lion of St. Mark, the emblem of Venice. Here thirty Venetian artists produce the blown glass-wares for which their factory is famous. Elegant vases, etchings, mosaics, and other decorations in Roman, Byzantine, Middle Age and modern styles are to be seen, and the exhibit is well worthy of a visit.

Adjoining this to the east is a small structure devoted to an exhibit of submarine diving, and next a very pleasant little New England log-cabin where meals are served in the good old-fashioned New England way.

The last village at this end of the Plaisance, and consequently just opposite the Diamond Match Company and the Beauty Show, is the Village of Irish Industries. This exhibit is under the presidency of the Countess of Aberdeen, wife of the Earl of Aberdeen, formerly viceroy of Ireland and recently appointed governor-general of Canada. While in Ireland, Lady Aberdeen founded the Irish Industries Association, the members and supporters of which society include the most prominent persons in Ireland of all classes, creeds and political opinions, and which has for its object the development and organization of cottage and home industries throughout Ireland, thus providing for the peasantry a permanent means of subsistence other than that of agriculture alone. Bad seasons and unfruitful land often reduce the people to the verge of starvation; but when another way of earning money is open to them, such as the making of underclothing, lace, embroidery, knitting, hand loom weaving and

the like, their prospects are greatly bettered. The Irish Industries Association has already been able to do much in making the work of the Irish poor known in Great Britain and in finding market for it. They now seek through this Irish Village at the World's Fair to demonstrate the expertness of the workers, and to find a market for their goods on this side the Atlantic; also to get together capital

IRISH VILLAGE.

wherewith further to improve and develop these industries. The gateway of the village on the Plaisance is modeled after the entrance to King Cormack's chapel, Rock of Chasel, and is of itself enough to arouse the pride of the patriotic Irishman. Just beyond the entrance is a replica of the cloister from Muckross Abbey, exact in every detail. The visitor passes from the cloisters through a succession of cottages, in each of which a home industry is exhibited in

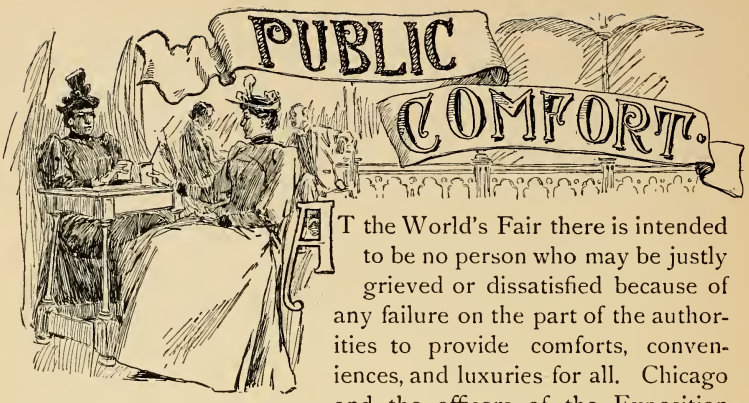
course of production; such as the methods of making the different kinds of lace produced in different parts of Ireland, embroidery, hand-loom weaving, spinning, knitting, and a model dairy in which dairy maids of the Munster Dairy School show both old and new ways of making the best of butter. Bog-oak and wood-carving are also represented, and a most beautiful selection of oak and Galway marble goods are exhibited for sale under the care of Miss Goggin, of Dublin. Then, too, there is another cottage devoted to a show of jewelry in characteristic designs. The special designs are replicas of the Tara brooch, the Fingal pin, initials from the book of Kells, and the old Celtic traceries, all being made by Irish workmen in the village. Besides these attractions the patriotic Irishman may once more stand on true Irish turf and carry away a piece of it, or a shillaly of true native blackthorn, as a memento. A beautiful specimen of an old Irish cross stands in the village square. A village concert hall, a museum, a village store and the public house are also prominent features, all clustering round the historic castle of Blarney. A piece of the genuine Blarney Stone from Ireland was brought here and built into the structure of this reproduction of the original castle, and here the adventurous or the romantically inclined may kiss it and obtain the gift of tongues which belongs to every true Irish man or woman. The two Irish villages of the Plaisance are rivals for popular favor, and the public is benefited thereby, for both strive constantly to secure the best of attractions for entertainment, and to each one is drawn a constant stream of visitors.

The scene, as one views it, looking down the long avenue which runs through the centre of the Plaisance, is one of striking curiosity. Natives of Dahomey, in their scant attire, Algerians, Egyptians, Turks, Japanese, Samoans, Laplanders and natives of a dozen other countries meet the eye at every turn. The street is constantly thronged, and visitors in turn may be transported by camel or donkey back, by reindeer sledge, by sedan chair or by the ice railway. It is a place of good nature and gaiety, and, after returning from a day spent in investigations of its wonders, one feels indeed that he has returned from making a trip around the world.

596 ESQUIMAUX VILLAGE—CRACKING THE WHIP.

There are yet a few exhibits scattered through the grounds of the Fair not yet named, which by their nature might be included in the displays of the Plaisance. Among these one of the more notable is the Esquimaux village. It is located exactly in the northwest corner of Jackson Park, and contains some fifty natives of Labrador, men, women and children. They show their wolfish-looking dogs, kayaks or canoes, kometics or sledges, curious carvings from walrus ivory, and their strange sealskin clothing.

Another is the French Colonies' exhibit, of two buildings. One of these is the exhibit of French colonies in Africa, Tunis and Algiers, and the other that of the French colonies in Asia, Annam, Tonquin and Cambodia. Both of these are of most artistic construction, and contain exhibits of remarkable interest. They are constructed entirely by private enterprise, and the Tonquin Building is the same one that was used at the Paris Exposition of 1889.



AT the World's Fair there is intended to be no person who may be justly grieved or dissatisfied because of any failure on the part of the authorities to provide comforts, conveniences, and luxuries for all. Chicago and the officers of the Exposition have from the first realized and appreciated that the nation and the world were for this period to be the guests of the city, and every preparation has been with the desire to give hospitable and cordial welcome to the millions who might accept the official invitation. The city put on its holiday dress. Dingy buildings were furbished with fresh color. Streets were paved and cleaned as never before. Hosts of outside amusements were provided for the entertainment of those who might wish to spend a portion of their time otherwise than at the Fair. Hotels by the score were erected, and accommodations for all who might come were made ample. But with all this preparation in the things of magnitude, the little things were not forgotten. It was realized that it was not enough to provide the greatest Exhibition of the world. That very delight would of itself be most wearing to one who spent hour after hour in studying the displays, and there must be provision for the small relaxations and the rest that would be needed by every one. There must be provision for the proper care and reception and direction of strangers in the city, some unable to speak the English language, others unacquainted with city ways, others who might become sick, and so careful study was made to decide what might best be done in all these directions. The result was the organization of the department of Exposition work known as the Bureau of Public Comfort.

This Bureau of Public Comfort has charge of all the arrangements

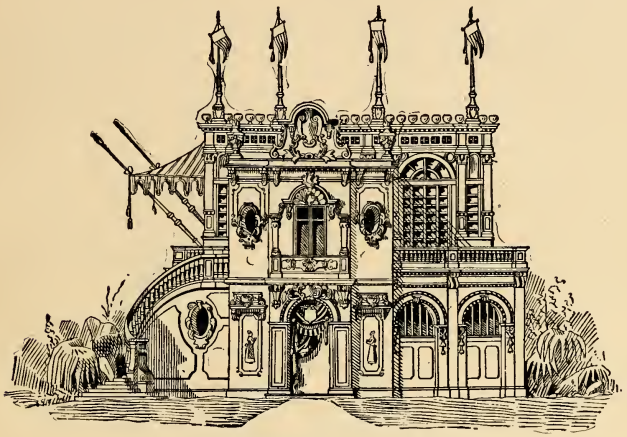
made by the Exposition Company for the accommodation of visitors to the Fair outside of the actual exhibit departments. For a time there were accusations made by interested parties, that sufficient attention was not being paid to matters of small comfort, and these circulated to such an extent that it was considered important to correct the misapprehensions. For this reason, the President of the Exposition, Harlow N. Higinbotham, issued a circular of information for the public, on these subjects. This then is the most authoritative statement of what has been done, and is of considerable interest. First as to the little things. An abundance of drinking water, the best supplied to any great city in the world, is provided free to all, and filters of the best system known are established in all parts of the grounds. This supply is from that grand body of fresh water, Lake Michigan. In addition, water is supplied, to those who desire it, from the celebrated mineral springs of Waukesha, at one cent a glass. Scattered all over the grounds, out of doors, are settees and benches for the use of every one, free of charge. There are enough of these to accommodate more than 50,000 people at one time, so there can be no doubt that this part of the supply of comfort is ample. About 1,500 comfortable and convenient toilet-rooms and closets are located at convenient points in the buildings and around the grounds, and these are absolutely free to the public. This is as large a number in proportion to the estimated attendance as has ever been provided in any exposition. In addition to these there are also nearly an equal number of lavatories and toilet-rooms, of a costly and handsome character, as exhibits, for the use of which a charge of five cents is made. To preserve order and prevent imposition on visitors, a large and efficient corps of guards, under the command of officers of the United States army, is on duty constantly upon the grounds, and the finest secret detective service ever put in operation in the world has been organized. This is composed of picked representatives of this service, from all the large cities of the world. Free medical and emergency hospital service is provided on the grounds by the Exposition management. This service was in operation for more than two years during the period of construction, and a large amount was spent in perfecting

it, and providing all modern appliances known to the profession. The Bureau of Public Comfort has provided commodious free waiting-rooms, including spacious ladies' parlors and toilet-rooms, in various parts of the grounds. Over $300,000 has been expended in providing for the comfort of visitors in this branch alone, from which there can be no return in money. There is also a building provided for the use of children, and parents may leave them here with perfect safety, and see the displays unincumbered by tired little ones. Besides all these departments of the work, the Bureau organized a rooming department on a large scale, where accommodations of any class could be arranged for in advance. Thus we have seen in a rapid glance the scope of the work of this department. Now let us look at the methods of work in some of the more interesting of the branches.

The first and most important necessity in providing public comfort for the millions of visitors to the Exposition was to provide suitable, convenient and good places where refreshments and meals could be obtained. In furtherance of this idea every single one of the great buildings of the World's Fair except the Art Galleries is provided with lunch-rooms and cafes. This list includes all of the departmental buildings, the Government Building, the Administration Building, and many others. The Wellington Catering Company, of Chicago, purchased for a large sum the privilege of installing and controlling these numerous restaurants. In addition to the one under the control of this company, many eating houses and cafés of various degrees of price and magnificence were established in special buildings erected for the purpose. Among these are the Café de Marine, the Swedish Restaurant, the Japanese Tea-house, the Polish Café, and the Clam-bake, all of which are grouped just north of the Fisheries Building. Many of the foreign buildings in the same vicinity have refreshments of their own kind which are served to visitors. Other special restaurant buildings to be found farther south are the Hayward Restaurant, just to the west of the Mines Building; the Casino, which flanks the south end of the peristyle fronting Lake Michigan; the great White Horse Inn, the Forest King Restaurant, and the

French Bakery exhibit, all of which lie to the south of the Agricultural Building.

Midway Plaisance is a hive of cafés, almost every one of the foreign villages having accommodations for thousands of visitors who may be served with refreshments of food and drink.



WALTER BAKER & CO.'S PAVILION.

In the northern portion of the Park the thirty State Buildings are all provided with refreshment rooms, many serving meals of elaborate character to those who care for them.

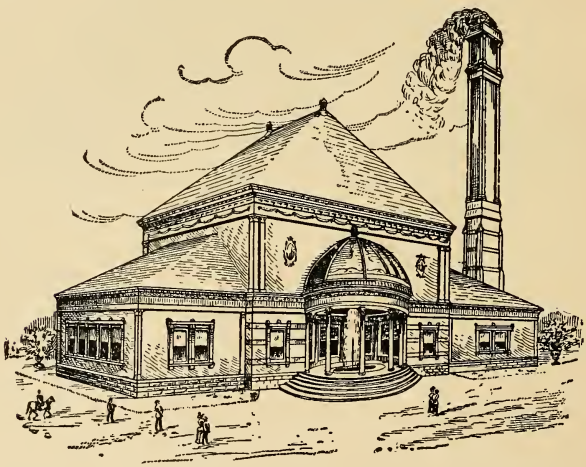
After food and drink, the next most important provision for public comfort is a place of rest. The Wooded Island, the Grand Plaza, and other open spaces of the Fair are provided with hundreds of settees which are always occupied by the weary. To many it is as great a pleasure to remain seated on one of these benches viewing the beauties of the landscape, and the curious people who pass, as it is to wander around among the exhibits. The lower floor of the great Casino is filled with seats, and every building has numbers of places for rest. In the Casino, the Terminal Station, the Woman's Building, and other large structures, beside all the State Buildings and Foreign Buildings, there are provided

parlors for men and for women which are free to all. In the Terminal Station these are elaborately furnished, and there are couches where one may sleep as long as one wishes.

Scattered in various places over the grounds are band stands surrounded by settees where one may rest and listen to sweet music at almost any hour of the day.

The Public Comfort Building, which was constructed during the early months of the Fair at a point just north of the Woman's Building, is a graceful structure, somewhat unique in shape and architecture, with spacious ladies' parlors, toilet rooms, check rooms, a café, and other necessary accessories.

The Children's Building, which is to the south of the Woman's Building, is a beautiful structure. It is a light, airy, graceful edifice,



WAUKESHA HYGEIA MINERAL WATER CO.—OFFICES AND PUMP HOUSE.

two stories high, 150 feet long by 90 feet wide. It is built around a court so as to give as much light, air, and out-of-door playroom as possible for the little ones; and to still further increase its capacity in this direction there is a playground on the roof fifty feet above the ground, with flowers, plants and trailing vines in

profusion, and made thoroughly safe by a strong wire netting which encloses it. It is a veritable child's world. Its model kitchen has all kinds of miniature furniture, and the children are taught to set the table, make beds, etc. In the room for the older boys modeling in clay, carving, carpentry, etc., are taught, while in the gymnasium physical culture methods are displayed. For the babies there is a well-appointed creche, or day-nursery, where they are taken care of by competent nurses who will feed and tend them while their mothers visit the exhibits. In the library are found all manner of children's books, papers and magazines in all of the languages; and in the playroom every species of games, dolls, and toys may be seen. The building is beautifully decorated, and in every way is perfect of its kind.

When it is remembered that everything in the way of public comfort is provided free, except when something is actually served, there can be little criticism upon this department and its success.

GENERAL REVIEW

AFTER the end of the Exposition all the world may be divided into two great classes, those who have attended the Fair and those who have not. A printed record, such as this, has in it certain elements which make it of interest and value for either class. Inasmuch as the latter class is enormously larger than the former, in spite of the immense crowds which thronged to the gates of Jackson Park, they are entitled to first consideration in such a volume as this.

But those who attend the Fair are also certain to refer frequently to their experiences and the sights they saw, whether for their own satisfaction or to interest their friends, and at such times it will be as welcome to them to find here the outlines of the journeys they made, and a record of the important things which they saw. So it is well to include in the work a résumé of the means of transportation to and from the grounds, and within them, as well as the outline of the best walks which may be described. Doing this as if it were a series of suggestions to the intending visitor, it will be in the most available and interesting form.

After reading, chapter by chapter, the history of previous Expositions, the preliminary history of the Fair and then the general description of the exhibits contained in the great buildings and departments of the Fair, even the entire stranger will know the more important features and be able to appreciate the magnitude and the scope of the enterprise; but to give additional interest and comprehension to him there is much of interest that he may obtain by making a casual study of the map, almost as if he was preparing to attend the Fair himself. For months before the first of May the

newspapers of the country filled their columns with information as to the cost of a journey to Chicago, and the time required to visit the Fair properly. But finally, when questions of time and expense were settled, the query narrowed down to a simple question into the best method of completing the sight-seeing when once it should be begun.

Now let the reader who wishes to form the best idea of the Fair and its magnitude follow this system of considering distances and routes, and by observing the map earlier in this volume follow the course of the most natural and expeditious sight-seeing possible. Careful estimates show that the total distance necessary to walk in covering all the aisles in every building, and one journey around all the walks through the grounds, is considerably more than 150 miles. It is certainly to be conceded that in the throng around every exhibit it will be difficult to walk at a rate faster than one mile an hour, and do the most casual sight-seeing. This then means, for one who intends to see the entire Exposition, the expenditure of 150 hours of time, or, at the estimate of a fair working day, at least three weeks. One who is a specialist in any of the great departments of the Exposition will certainly extend the time of investigation. Let us write for the average man, the generalist, the one with two weeks at his disposal for constant sight-seeing, and find out in what way he may best fill his time to accomplish the most satisfactory results.

Beyond all question the first thing to be done by the one who is a stranger to the fair grounds, and about to make his first visit there, is to procure in advance a satisfactory map of the grounds, and make himself, as far as possible, thoroughly familiar with a general outline and the location of the buildings and lagoons; then on the first trip to the Park do not enter a single building. One day is all too short for anything more than a satisfactory and comfortable walk around the grounds. Even the walk around the grounds would be too long to cover in one day were it not for the greater freedom of movement outside than there is inside the buildings. Let us say that for this first trip you are a passenger on the Illinois Central suburban trains running from the heart of the city to the fair grounds. Leave the train at the 57th street or South

Park station, and enter Jackson Park at the 57th street entrance. You will find yourself facing east down a long avenue, upon which the State Buildings and the Art Galleries front. Turn to your left on the first avenue which crosses this main avenue and follow it in a half circle until you approach the Lake shore, now at the east end of that same main avenue. Then return directly west to your starting point. Now follow southward a continuation of the same avenue which before you followed on the northward curve, continuing to a point between the Illinois State Building and the California State Building, each of which will be easily recognized, the first by its great dome and the second by its similarity to an old Mexican mission house. Here turn to the north again, at an acute angle, and approach the Art Gallery, passing along the south side of it, then the east side, and finally crossing under the elevated railroad you will reach the Lake shore again at the same point as before.

From here follow the Lake shore southward, passing along a succession of buildings of foreign governments, until you reach the British Building, which will be identified by its flag and its proximity to the battle-ship; then return westward through a winding avenue until you reach the front of the Illinois State Building and the north shore of the great Lagoon. During the course of the walk thus far outlined you will have passed all of the State and Foreign Buildings except a few of the least importance; you will have encircled the Art Galleries and obtained a view of the north side of the Fisheries Building. This completes the upper third of the grounds, the great division which includes the buildings we have named.

The next division into which a description of the grounds naturally falls is the central portion, or those main buildings surrounding the Lagoon and the Wooded Island. From your station at the north end of the Lagoon, follow the avenues along its west shore, which will lead you past the Woman's Building, the Horticultural Building, the Choral Building and the Transportation Building, to the north end of the Mines Building; here turn east to a point midway between the Mines and Electricity Buildings, whence follow a bridge northward across Hunter's Island on to the Wooded Island. Walk northward its full length. At the northern end, after passing

the Japanese Temple or Ho-o-den, cross by a bridge eastward to the Fisheries Building and follow along its southerly side to its main entrance; here cross by another bridge to the Government Building, from the north side of which follow an avenue to the Lake. A delightful walk half a mile southward along the shore of Lake Michigan and past the great side of the Manufactures Building will bring you to Music Hall, and you will then have ended another of the great divisions of the grounds. From Music Hall the third division waiting to be attacked is the Grand Court or Plaza, including those buildings which surround the Basin and the Administration Building. From Music Hall walk directly west past the southerly ends of the Manufactures, Electricity and Mines Buildings. Then turn south, crossing the Plaza between the Administration Building and the great Railway Station. Turn eastward along Machinery Hall, follow it, cross the Canal, pass the north side of the Agriculture Building to its east end. Here, at the Casino, turn south along the end of Agricultural, and on a bridge pass to the Peninsula, upon which stands the Monastery of La Rabida. A walk southward will then lead you past the Krupp Gun Works, the Leather exhibit, the Dairy Building and the Forestry Building, at which point you have gone far enough toward the extremity of the grounds. Here a great avenue will lead you westward past the Stock exhibit barns, the Stock Pavilion, the Saw-mill, the Oil exhibit and the great Power Houses and Boiler Houses of Machinery Hall. At your own choice you may then return to the Grand Plaza beside the South Canal which separates Machinery Hall from the Agricultural Building, or you may reach it by passing around the west end of Machinery Annex. Once on the Grand Plaza again, you have made complete circuit of the grounds, seeing every structure of note; you have not doubled on your own path, and are ready to enter the Central Station and board a train for home again. The total length of this walk is about twelve miles. For some persons one such trip will be enough; others will find as much enjoyment in frequent excursions of the kind, doing a portion of it at once, as in the harder work of sight-seeing within the buildings. It may be said, too, that for those who are crowded for time this walk has accom-

plished much that will not need to be repeated. One who does not care much for them might easily abandon any further visits among the State Buildings, while those whose tastes are different, and who care little for the Stock exhibits and out-door Agricultural exhibits, need make no other trip south of the buildings which front the Grand Court, except one to visit the buildings facing the Lake, beginning with La Rabida and ending with Forestry.

Now let us see how the time may be best applied for in-door sight-seeing.

The person who has read, chapter by chapter, the outline of the notable exhibits as they have already been printed in this volume, will need no suggestion here as to the manner of seeing the interior of one of the great buildings after he is inside of it. But some suggestions are to be made as to the way of reaching each building, and the order in which they may be best visited. To reach the Art Galleries, the State Buildings and the Foreign Buildings, it is best to patronize the World's Fair express trains of the Illinois Central Railroad, or the Wabash and Cottage Grove Avenue Cable Cars. The cable cars land one at the Fifty-seventh Street entrance, most convenient to everything in this list. The first station of the trains is at Fifty-ninth street, almost as convenient to most of these, and with the additional advantage of being within reach of the Woman's Building, the Fisheries Building, the United States Government Building, the Horticultural Building and the Wooded Island.

If the visitor is going to spend the day among the structures farther south, let us say the Manufactures Building, the Electricity Building, the Mines Building and the Transportation Building, he should continue on the Illinois Central trains to the Sixty-third Street Station, or take advantage of the service of the elevated railroad, the latter of which runs directly into the grounds of the Fair. If Machinery Hall, the Agricultural Building, or the great collection of exhibits south of them are the attraction of the day, the terminal station of the Illinois Central express train, just in the rear of the Administration Building, and within the grounds, is the one to take. For Midway Plaisance the Fifty-ninth Street Station

of the Illinois Central is the landing place, if one intends to enter it at the east end. If the attractions for the day are at the other end of the Plaisance, the visitor should take the Wabash and Cottage Grove Avenue Cable Car from the business district, and by observing that the car has on it a sign which reads "Oakwoods" he may be assured of being carried exactly to the entrance of the Plaisance at the end which adjoins Washington Park.

Probably the most delightful way of all to reach the Fair is by steamers which run from the foot of Van Buren Street through the waters of Lake Michigan, and land at the immense pier which reaches out into the lake from a point just east of the Basin. This trip is made in something more than half an hour. By it one gets the finest view there is of the White Palaces of the World's Fair, sailing slowly past them from north to south, and viewing in turn the State Buildings, the Foreign Buildings, the Naval Exhibit, the Government Building, the Manufactures Building, with its stupendous roof, and finally the Peristyle and its kindred architectural features, where the journey ends.

From here, one who lands at the Fair by steamer may employ one of the most interesting and curious methods of transportation at the Exposition, the Movable Sidewalk, which carries those who patronize it from one end to the other of the long pier. It is a complicated arrangement which runs by electricity. A continuous track carries a system of trucks, which have built over them a continuous platform. This is divided, and different parts of it move at a different rate of speed. It never stops, and the intending passenger must mount it while it is in motion. This is not difficult, as the first section of the platform is moving at a low rate of speed, while the next section is moving more rapidly, and is to be mounted from the first. As a novelty it is one of the most noted features of the Fair.

Within the grounds there are many methods of transportation which may be utilized. Steam, electricity, and man-power are all at the command of the visitor who desires to employ them. First of all is the Intramural Railway. This is an elevated structure, the motive power of which is electricity. Its length, from end to end,

is three and one-eighth miles, and its track is double all the way. There are ten stations at convenient points. The road begins with a loop which encircles the Indian School. It runs southeast, encircling the Anthropological Building, and then turns northwest. Passing between the colonnade and the Stock Pavilion, the road skirts the south side of the Machinery Building and Annex, and then turns northward past its west end. It next crosses over the roof of the Perron of the Terminal Station, where connection is made with all out-of-town railways. The next station is on the

INTRAMURAL RAILWAY.

roof of the Annex to the Transportation Building, which is called Chicago Junction. Here connection is made on a level with the trains of the Elevated Railway which run to the city. From here, turning to the western edge of the grounds, the road extends directly north to the northwest corner, passing Midway Plaisance, the California Building, and through the Esquimaux Village. Here a turn is made east along the north fence, and upon reaching the Iowa Building a curving course among some of the other State structures carries the tracks between the French Building and the east Annex to the Art Gallery, through the Foreign Buildings, and past the Fisheries Building. Its terminus here is at the United States Government Building, where it makes a loop over the waters of the lagoon and turns back on its course to retrace its way on

the other track to the starting-point. The road is unique and substantial in construction, and in all its details is a triumph of electrical engineering. Its use is indispensable to the visitor who desires to see the great Exposition quickly and with comfort. Each train makes the round trip in thirty-five minutes, attaining a speed of from twenty to thirty miles per hour between stations. From ten to fifteen trains are in operation every hour. Injury to passengers by accident has never occurred. The trains cannot be derailed, and the block signal system makes collisions impossible. One fare of ten cents entitles the passenger to transportation to either terminus of the road, from the station where the train is taken. The Intramural Railway is in itself one of the greatest exhibits of the Exposition. The enormous dynamo, or electrical generator, which furnishes the power for operating the road, is the largest machine of its kind in the world, and the largest piece of machinery on exhibition at the Fair. It supplies three thousand horse-power; it cost $100,000, and weighs 192 tons. It is on exhibition in the power house of the road near the Forestry Building.

One of the most delightful experiences which one may have during a visit to the Fair is a voyage around the waters of the lagoons in one of the dainty electric launches. Without smoke, noise or odor, they plow their way rapidly along through the South Canal, the Basin, the North Canal, the Lagoon, and the North Pond. The Wooded Island is encircled, and a delightful view is had of every building. The architects of the Fair paid great attention to the landscape effect of the whole, as it would appear from the water, and no one should miss the opportunity to see the display from this point of vantage.

A fleet of more than fifty of these is constantly passing and repassing on the lagoons and canals during all the hours that the Fair is open to the public. The course over which they run measures about three miles for the round trip, and there are landings at all the large buildings and principal points of interest. The boats thus furnish the best communication between different parts of the ground and at the same time an excellent means of refreshing one's self when tired of sight-seeing in the exhibit buildings.

They are about sixteen feet in length over all, with a beam of six feet three inches, and a draft of about twenty-eight inches. They are elegantly finished in mahogany, are luxuriously cushioned and carpeted and carry about thirty passengers each. The motive power is furnished by strong batteries manufactured by the Consolidated Electric Storage Co., and motors especially designed and constructed by the General Electric Co. Batteries and motors are placed beneath the seats and flooring, so that the utmost carrying capacity is availed of and they are absolutely free from smoke, grease, offensive odors or vibration. At the normal rate of speed the batteries will drive the boats sixty miles without recharging, and while the speed of the launches on the lagoons is limited to six miles an hour, they can be spurted to a rate of nine to twelve miles when desired. The launches are provided with gayly striped canopies to protect passengers from the sun, and with side weather curtains for use on stormy days, or in case of a sudden shower.

The same journey may be taken in graceful gondolas propelled by Italian gondoliers, direct from Venice. They are gaudily attired, as are their crafts, and no one with a touch of romance in his nature fails to patronize them. The Gondola Company has twenty gondolas and four bissones, or state gondolas. Sixty gondoliers are employed to propel them. Their costumes are of bright colors, after the style of the fourteenth century, while those for gala days and fete evenings are especially handsome. The canopies of the gondolas and bissones are of rich, heavy velvet, with linings of delicate tints to match; the roofs are covered with heavy satin. Gold fringe, tassels and cords are used to ornament these canopies.

Another boat voyage which may be taken is that in the steam launches which travel up and down the water-front of the Exposition. They enter the Basin to secure their passengers, and then passing out under the Peristyle go up to the North Inlet and the Naval Pier, then returning, encircle the Long Pier and enter the South Pond. They are staunch little craft and are very desirable for one who wishes a ride on Lake Michigan.

The only other craft on the interior water ways are the occasional canoes manned by Indians from the ethnological exhibit, or some

special exhibit of small craft by the transportation department. At various points along the Wooded Island canoes and odd-shaped boats are run up on the shore as purely decorative features. There is no connection between the south pond and the rest of the interior water ways except a low opening to admit the passage of the fire boat. On the interior water ways there is a uniform depth of six feet, although none of the launches draw more than three feet. For Exposition officials there is a special fleet of four electric launches. One is for the director of works, one for the director-general, and

GONDOLAS NEAR JAPANESE PAVILION.

two for distinguished visitors. The steam launches have a pilot, an engineer and one deck hand each. The electric launches each have a motor man, who guides the craft, and a deck hand. The uniforms of all the officials connected with water transportation at the Fair are navy blue in single and double-breasted coat patterns. The rank of the official is on his cap and the company to which he belongs on his coat collar.

Every species of craft under World's Fair control flies two flags, the American and the Columbian maritime flag. The latter is of white bunting with an orange-colored wreath of oak leaves in the centre surrounding a blue anchor. Whether on the monster whaleback or the trim launch the Columbian colors blend with those of

the nation. The dreamily drifting gondolas have fourteenth century flags in keeping with the illusion that the Middle Ages have been transplanted to Chicago to run shoulders with the advanced civilization of the nineteenth century.

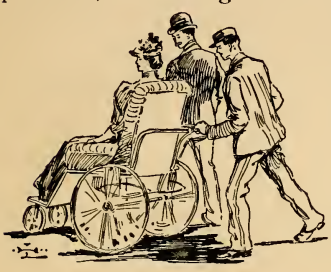
There are yet some buildings of interest, and some out-door exhibits which have not been named or described in the earlier chapters. One of these is the Merchant Tailors' Building. This structure has a delightful location facing the waters of the lagoon, just to the southeast of the Illinois State Building. It is fifty-five feet square, with uniform porticos, front and rear. The interior of the main room is octagonal in shape. There are the usual rooms for public comfort. The walls are finished in cream and gold, and beautifully decorated with mural paintings on canvas, representing the eight great historical periods of dress. The first scene is Adam and Eve making aprons of leaves; second, a barbarian scene; third, Egyptian; fourth, classical Greek; fifth, Mediæval; sixth, Rennaissance; seventh, Louis XIV. to XVI.; eighth, Modern. There are also six frescos emblematic of the trade. The building is in the form of a Greek temple, and is thoroughly artistic in every detail.

The hospitals were mentioned in the chapter concerning public comfort, but in suggesting here how to see the Fair it may be said that they are four in number. The first and largest is the general hospital in the Service Building. But in addition to this there are an Army Hospital, a Homœopathic Hospital, and a Ducker Hospital, the latter of which is a model of those used so extensively in army service. The Ducker Hospital is built in interchangeable sections which can be easily packed and removed and again set up. A hollow shaft between the floor beams admits the introduction of fresh air, disinfecting fumes, etc., each room being furnished with registers which may be shut or opened at pleasure.

The White Star Steamship Line has a dainty little building facing the Lagoon, just to the north of the Horticultural Building. In the southwest and southeast corners of the Park are numerous warehouses, carpenter shops, garbage furnaces, sewage cleansing works, coal sheds and other necessary structures. It consists of a pavilion with a neat little portico and its pillars wrapped with

rope with a plaited rope capital. This represents the pilot house of a steamer and is filled with handsome models of both the old and new style boats of this line. These are perfect in every detail. In addition are shown reproductions of the smoking, dining and reading rooms of the steamers "Majestic" and "Teutonic."

In addition to all these we have named, it must not be forgotten that the beauty of the ground is greatly enhanced by the scores of daintily artistic little structures scattered everywhere for purposes of utility. Fire and guard stations, ticket offices, band stands, chocolate and confectionery stands, news stands, Hygeia Water pavilions, and rolling chair booths in almost every instance assist the landscape, rather than mar it. No one of these was permitted to be erected except by a design approved by the Exposition authorities. The result is that there is a certain harmony of beauty which has never been seen in any other undertaking of approximate magnitude before.



WHEEL CHAIR.

As a matter of fact, it is appropriate to call the Exposition one grand display to the credit of any one of half a dozen of its departments; for at least half a dozen of them share in the credit of the whole in addition to their own special displays. For instance, no one could criticise the claim that the Exposition is one grand display of Fine Arts. Its architecture, its decorations, its statuary, its fountains and the aspect of the whole is one delight to the lover of true art.

Just as truly is it a display of the Horticultural Department, for the Wooded Island, the beveled lawns on every hand, the flowers which decorate every parterre, and the plants which adorn every balustrade are all the work of this department so far as their present arrangement, setting and perfection are concerned.

On every hand there is placed before our eyes some feature which belongs to the Transportation Department. All manner of boats and of land communication are made available to the visitor

here. The Electricity Department also shares in this compliment, for not only within its own building but every place in the grounds its work is apparent. Without the work of this captured lightning the beautiful effects of night illumination would be impossible. Machinery is another department which must share the same credit, for perfected machinery was used in every operation of construction of the Exposition. So the glory is to every one.

The greatest pity of all is that these beauties are to fade. As far as it is now prophesied, the main structure of the Art Gallery is the only one which is to be preserved. Contracts made with the Park Commission by the Exposition authorities, before the grounds were given up to this use, provide that within a few months after the Fair is closed every building shall be removed and the Park left unmarred. This, in itself, will be an immense undertaking, and there will be many sad hearts at the thought that so much beauty must perish from the earth.

At the time when the plans were being elucidated for the probable Exposition it was suggested by the Hon. Thomas B. Bryan, now Commissioner-at-large, that steps should be taken to provide a certain number of permanent buildings. His plan provided that a tract of some hundred acres should be purchased on the Lake Shore on which should be erected some half a dozen or more magnificent buildings of permanent character, all of size and kind adapted to future exhibitions. Adjoining this tract was to be rented another and larger one on which should be erected all the necessary temporary structures, the State Buildings, the Foreign Buildings, those which have now naturally gone to Midway Plaisance and many others. This done, and the Fair ended, it would have been necessary to remove none except the temporary structures, while on the remaining property there would have stood a sufficient number of magnificent buildings that an Exposition might have been given here every year. Had this been done, the Exposition would also have been the owner of a fine property of immense value, instead of being merely temporary tenant of structures to be removed. Judge Bryan was unable to secure the adoption of this

idea, and the reasons for regret that it was not accepted are now apparent to every one.

The World's Columbian Exposition has enlisted the services of writers and artists, the best that the world knows. They are giving their efforts to the record of its wonders in newspaper and magazine and volume. It is the greatest enterprise at present existing before the mind and eyes of the world. The judgment that it is superior to any previous exposition has been almost unanimous, and America has cast a challenge to the world to surpass it if possible. The arts and sciences are all here exploited in their most advanced perfection, and yet some of them, notably electricity, are but in infancy, and every year shows enormous strides.

The fifth centennial of the discovery of America will find a greater nation and a greater city to celebrate the event. Our country grows at a rate which, if carried on, will make it by that time enormously stronger than any other in the world. Our population, and our resources and our capacity grow as necessity demands. The limit cannot be foreseen. Who can doubt that it will remain for the United States herself to surpass this World's Fair if it is ever to be surpassed?

THE ART INSTITUTE.

By Hon. Thos. B. Bryan, *Commissioner-at-Large and Vice-President of the World's Congress Auxiliary.*

THE World's Congress Auxiliary is in a sense co-ordinate with the World's Columbian Exposition. It is an organization founded to work, through the months of the Fair, to provide a mental exhibit in Chicago as great as the material exhibit within the walls of the "White City." It will be interesting to observe something of the history, scope and aims of the Congress Auxiliary.

During the early days of creating the plan of the Fair, when all plans were yet unsettled, the idea was born. At that time every man whose energies had been enlisted in the interest of the great Exposition was employing all the faculties of his mind to suggest features and plans for discussion. Some were of merit; many, while ingenious, lacked practicability. A record of all the strange things, chimerical and otherwise, thus proposed for purposes of exhibition or as means of advertising would be voluminous but interesting reading. But the World's Columbian Exposition and its allied features came to completion by a process of selection before construction. The good was chosen to be accomplished, the unavailable was put aside.

With so many earnest ones whose first thought was success for the Exposition, it is not strange that when the idea, original and valuable, which has become an accomplished fact in the Congresses,

was suggested, its immense merit was recognized without delay, and it was adopted.

The originator of the idea of holding the series of meetings known as World's Congresses was Charles Carroll Bonney, Esq., of Chicago. Judge Bonney for many years had been a lawyer of prominence, and a public-spirited man, whose efforts had been employed to considerable extent in the cause of popular and higher education. His heart was in this work, and no opportunity had ever escaped him to do good in this direction.

He was engaged, as were many others, in thought for what might be employed as an accessory to the wonderful exhibits of material resources, and accomplishments of the World's Fair. It occurred to him that an exposition of every great department of mental activity ought to be held, supplementary to the material exhibits. Such could take no form save that of meetings of the great men of the world, where there should be free discussion of the problems offered. The great benefits to be obtained from such interchange of views would be undeniable. Furthermore, while the presence of the masters of thought would be of immense interest to the thousands who would see them, this interest would be subordinate to the benefit derived by the same throngs from hearing their words, and from the inspiration of their present example. This, then, was the vague outline of what developed into the World's Congress Auxiliary.

Mr. Bonney went before the Board of Directors of the Exposition with the outline of his plans. The recognition of their merit was prompt, and he was authorized to proceed with the work of their completion, and of organization. The official designation of the institution was The World's Congress Auxiliary of the World's Columbian Exposition of 1893, and the motto chosen for it was "Not things, but men." The originator of the idea was chosen president of the formal organization, and was placed in active charge of the work. Thomas B. Bryan was made vice-president; Lyman J. Gage, treasurer; and Benjamin Butterworth, secretary. Offices were opened in the headquarters of the Expo-

sition, and printed outlines of the work as suggested began to be circulated in great numbers.

The first circular issued is interesting as showing how complete the plans then were, and how exactly they were carried out, in the course of the meetings. It was sent out under date of October 30, 1890, very soon after the first plans had been formulated. After a paragraph in regard to the prospects for a great exposition of material progress, the announcement continues as follows:

But to make the Exposition complete, and the celebration adequate, the wonderful achievements of the new age in science, literature, education, government, jurisprudence, morals, charity, religion, and other departments of human activity, should also be conspicuously displayed as the most effective means of increasing the fraternity, progress, prosperity and peace of mankind. Among the great themes which the Congresses are expected to consider are the following:

I. The grounds of fraternal union in the language, literature, domestic life, religion, science, art and civil institutions of different peoples.

II. The economic, industrial, and financial problems of the age.

III. Educational systems, their advantages and their defects; and the means by which they may be adapted to the recent enormous increase in all departments of knowledge.

IV. The practicability of a common language, for use in the commercial relations of the civilized world.

V. International copyright, and the laws of intellectual property and commerce.

VI. Immigration and naturalization laws, and the proper international privileges of alien governments and their subjects or citizens.

VII. The most efficient and advisable means of preventing or decreasing pauperism, insanity and crime; and of increasing productive ability, prosperity and virtue throughout the world.

VIII. International law as a bond of union, and a means of mutual protection; and how it may best be enlarged, perfected and authoritatively expressed.

IX. The establishment of the principles of judicial justice, as the supreme law of international relations; and the general substitution of arbitration for war, in the settlement of international controversies.

It is impossible to estimate the avdantages that would result from the mere establishment of personal acquaintance and friendly relations among the leaders of the intellectual and moral world, who now, for the most part, know each other only through the interchange of publications, and, perhaps, the formalities of correspondence.

And what is transcendently more important, such Congresses, convened under circumstances so auspicious, would doubtless surpass all previous efforts to bring about a real fraternity of nations, and unite the enlightened peoples of the whole earth in a general co-operation for the attainment of the great ends for which human society is organized.

This organization is intended to promote the success of the Exposition of the material products of civilization, science and art, but will confine its own operations to the Exposition in appropriate conventions of the principles of human progress.

This address, signed by the president of the Auxiliary, carried to thinkers all over the world the plan as suggested, and the immediate co-operation was hearty and encouraging. The next step was to subdivide the topics for discussion, and appoint leaders in each field, to assume the active conduct, each of his respective division.

Scores of prominent men in every line of human activity were thus interested, and the result was that organization was soon complete in every detail. Then as the leaders began to give their best talents to the work, divisions and subdivisions were arranged, dates assigned for the various Congresses, chairmen of committees appointed, and speakers invited to participate. A woman's branch of the Auxiliary was organized, of which Mrs. Potter Palmer was made president, and Mrs. Charles Henrotin vice-president. One month before the opening of the Exposition, the Auxiliary was

enabled to announce the complete programme of Congresses, and all other needed information for intending visitors.

The place provided for the holding of the various sessions was in every respect as excellent as could have been desired. Instead of one of the great buildings at Jackson Park this place was the new Memorial Art Palace, on the Lake Front Park of Chicago, at the intersection of Adams street and Michigan avenue. The location, in the heart of the busy city, was thus unsurpassed. This building had been erected by the Art Institute of Chicago, in connection with the World's Columbian Exposition, which shared the expense, and so secured the use of the building during the period of the Fair. The total expense was thus about $600,000. Within this building were offered thirty-three halls, besides six committee rooms, all at the service of the Auxiliary. Between the wings of the building proper were erected two large audience halls, each seating three thousand people, these to be used for the general public sessions. The equipment was, therefore, all that could possibly be asked.

This last general announcement, better than the first, indicated the scope and desire of the Congresses. It said: "The leading idea of the World's Congresses of 1893 is to bring the leaders of human progress from the various countries of the world together at Chicago, during the season of the World's Columbian Exposition, for the purposes of mutual acquaintance and the establishment of fraternal relations. The chief work of the World's Congresses of 1893 will be to review the achievements which have already been made in the various departments of enlightened life and sum up in each Congress the progress of the world, in the department involved, to the date of the Congress; to make a clear statement of the living questions of the day which still demand attention, and to receive from eminent representatives of all interests, classes and peoples suggestions of the practical means by which further progress may be made and the prosperity and peace of the world advanced."

Now as to the subjects of general departments of the Congresses and the special or divisional Congresses into which the work was

arranged. This list of subjects will indicate better than anything else the scope of the work. They are as follows:

The Congresses of the Department of Woman's Progress, including more than twenty-five Division Congresses, to set forth the progress of woman in education, industry, literature and art, moral and social reform, philanthropy and charity, civil law and government, and religion.

The Congresses of the Department of the Public Press, including discussions of the public press, the religious press, and the trade journals.

The Congresses of the Department of Medicine, including those of homœopathic medicine and surgery, eclectic medicine and surgery, and medico-climatology.

The Congresses of the Department of Temperance, including those of such participants as the National Temperance Society of America, the Independent Order of Good Templars, the Sons of Temperance, the Royal Templars of Temperance, the Catholic Temperance Societies, the Woman's Christian Temperance Union, the Non-Partisan Woman's Christian Temperance Union, the American Medical Temperance Association, vegetarian societies and social purity organizations.

The Congresses of the Department of Moral and Social Reform, including the International Conference and National Conferences of Charities, Correction and Philanthropy, instructors of the feeble minded, humane societies, the King's Daughters, Society of St. Vincent de Paul, and kindred societies. The Salvation Army.

The Congresses of the Department of Commerce and Finance, including meetings of bankers and financiers, boards of trade, merchants and building associations, and Congresses of railway commerce, water commerce, and various branches of insurance.

In the Department of Music, Congresses on musical art and musical education.

In the Department of Literature, Congresses of authors, historians and historical students, librarians, philologists, and students of folk-lore.

In the Department of Education, Congresses of college and uni-

versity faculties, including university extension, of college and university students, of college fraternities, of public school authorities, of representative youth in public schools, on kindergarten education, on manual and art training, on physical culture, of business and commercial colleges, of stenographers, of educators of the deaf, of educators of the blind, on Chautauqua education, on social settlements, and a general educational congress on higher education, secondary education, elementary education, kindergarten instruction, school supervision, professional training of teachers, art instruction, instruction in vocal music, technological instruction, industrial and manual instruction, business education, physical education, educational publications, rational psychology in education, and experimental psychology in education.

Congresses in the Department of Engineering, on civil engineering, mechanical engineering, mining and metallurgical engineering, engineering education, military engineering, marine engineering and naval architecture, and aerial navigation.

In the Department of Arts, Congresses on architecture, painting and sculpture, decorative art, photographic art, and art museums and schools.

In the Department of Government, Congresses on jurisprudence and law reform, civil service reform, suffrage in republic, kingdom and empire, government of cities, patents and trade marks, social and economic science, weights, measures, coinage and postage.

In the General Department, Congresses on arbitration and peace, Africa, the continent and the people, medical jurisprudence, dentistry, horticulture and chess.

In the Department of Science and Philosophy, Congresses on astronomy, anthropology, chemistry, electricity, geology, Indian ethnology, meteorology, pharmacy, philosophy, psychical research, and zoölogy.

In the Department of Labor, Congresses to consider the condition of labor, work and wages of women and children, statistics of labor, literature and philosophy of the labor movement, labor legislation, living questions, and means of progress, arbitration and other remedies.

In the Department of Religion, a series of union meetings, in which representatives of various religious organizations will meet for the consideration of subjects of common interest and sympathy; denominational presentations to the religious world as represented, in the parliament of religions, of the faith and distinguishing characteristics of each denomination and the special service it has rendered to mankind; informal conferences, in which the leaders of a particular denomination will be present to answer inquiries for further information; denominational Congresses, in which the work of the denominations will be more fully set forth and the business of the body be transacted; Congresses of missionary societies; Congresses of religious societies, including the Young Men's and the Young Women's Christian Associations, the Evangelical Alliance, the Society of Christian Endeavor, ethical organizations, and other associations of appropriate character.

Congresses in the Department of Sunday Rest, to consider the weekly rest day on physiological, economical, governmental, social, moral and religious grounds.

In the Department of Public Health, sections organized for the consideration of sanitary legislation, jurisdiction and work of public health authorities, prevention, control and mitigation of epidemics and contagious diseases, and food inspection and other subjects.

The final Congresses of all, those of the Department of Agriculture, in which are arranged meetings on general farm culture, animal industry, fisheries, forestry, veterinary surgery, good roads, household economics, food problems, agricultural legislation, agricultural education and experiment, including agricultural chemistry, practical geology, economic climatology, economic entomology, and practical botany.

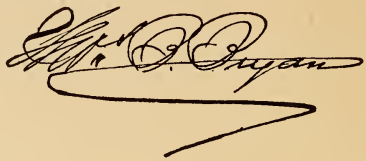
In the same prospectus is a list of notes of information regarding the Congresses, some of which are of interest here. None but the leaders of the world's thought are intended to be heard. The official language of the Congresses is to be English. Copies of all papers will be preserved, and after the completion of the series of

meetings volumes will be published, containing the full discussions on all topics. Finally, it is said, "the object of the Congresses is not to attempt the impossibility of settling anything by debate during the Exposition season, but to elicit from the leaders of thought in all countries, convened in fraternal assembly, the wisest and best thought of the age on the living questions of our time, and the means by which further progress may be made. Controversy is excluded from the World's Congresses of 1893. Advocates will present their own views, not attack the views of others."

Little elaboration is needed to indicate the immense importance of the possible results of the Congresses. The scope as outlined in what has been quoted shows the breadth of conception and the intentions. At the time of this writing enough of the great conferences have been held to prove that the anticipations will be all justified. Great men have met and considered problems of world-wide interest. The public has recognized most fully the dignity and importance of the enterprise. At all times the audiences have been large and attentive, and the public press has given to the larger circle of readers the benefits of what they could not hear in person.

Out of the World's Columbian Exposition has come inspiration for many boasts. If the completed enterprise were the result of one man's effort of mind and body, or if the one were multiplied ten times, those active individuals might rest under modesty's obligation to remain silent, except to express gratification and appreciation for whatever of praise might be given to their work by the world. But as the credit for what exists in the comprehension of the Exposition and its allied features makes not to the exclusive honor of one man or of a score, but to that of a host, the restriction vanishes. When praise is given to the Exposition and the forces which created it, it is praise to the influence of civilization, to civilization itself, rather than to any individual, or corporation, or municipality, or nation. Therefore any one may be proud of what has been done, and may express that pride, with no fear that a charge of vanity may lie against him, however close his connection

may have been with the administration of the enterprises. And when the results of the Fair are measured, so far as they may ever be, it seems certain that of all its features, co-ordinate and allied, none will deserve more credit than the World's Congress Auxiliary for the benefit and the strength of its influences.



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